



MedArmor

ASSESSMENT REPORT

COMPREHENSIVE HEALTH INFORMATION

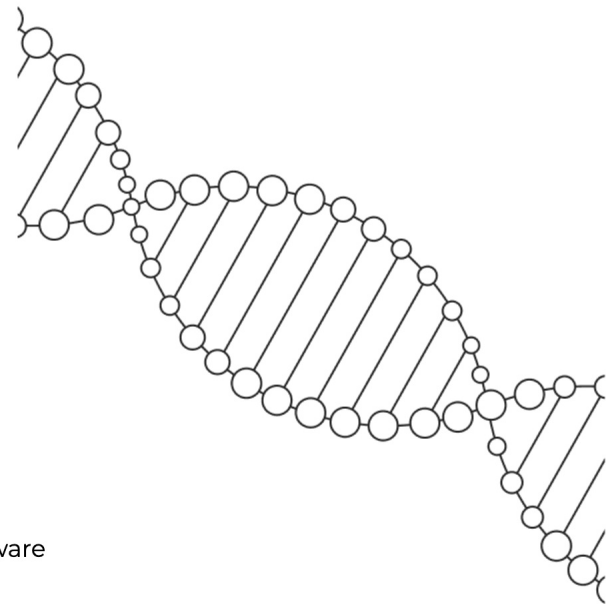
Mr. Nguyễn Văn A

Date of birth 22/10/1985

Gender Male

Customer ID 24

Date of testing 12/06/2025





MedArmor

At MedArmor Vietnam, we believe that early detection is the most powerful form of health protection.

Through artificial intelligence and advanced biological analysis, our personalized screening solutions help you identify risks early—before any symptoms appear.



MedArmor Vietnam Co., Ltd.
33C Lê Thanh Toản, Phường Saigon, TP.HCM



028 665 11111



info@medarmor.vn



medarmor.vn



AI-Powered Early Screening

With over 94% accuracy, MedArmor's AI helps detect health risks 5–7 years before symptoms appear.



Comprehensive Transcriptome Analysis

- Utilizes next-generation RNA-Seq technology
- Measures 25,000+ gene transcripts in real time



Early Disease Biomarker Detection

- Identifies changes in 350+ specific biomarkers
- Detects disease 4–6 months before symptoms appear



Treatment Response Monitoring

- Tracks gene response to medication within 72 hours
- Enables real-time personalized treatment adjustments



Immune Activity Profiling

- Analyzes 85 inflammation and immune pathways
- Detects chronic inflammation, autoimmune conditions, and immune deficiency



mRNA Gene Expression Analysis

Purpose: Detect early disease activity through real-time gene expression.



SNP Analysis

- Screens 500,000+ genetic variants
- Estimates risk for 40+ common diseases (cardiovascular, diabetes, cancer, etc.)



Gene–Drug Interaction Analysis

- Analyzes 120+ gene–drug interaction pathways
- Supports optimal drug and dosage selection
- Reduces adverse drug reactions by up to 87%



Epigenetic Assessment

- Measures DNA methylation at 850,000+ sites
- Determines biological age, toxin exposure, and lifestyle impact





MedArmor

Understanding your body

First step toward your lasting health



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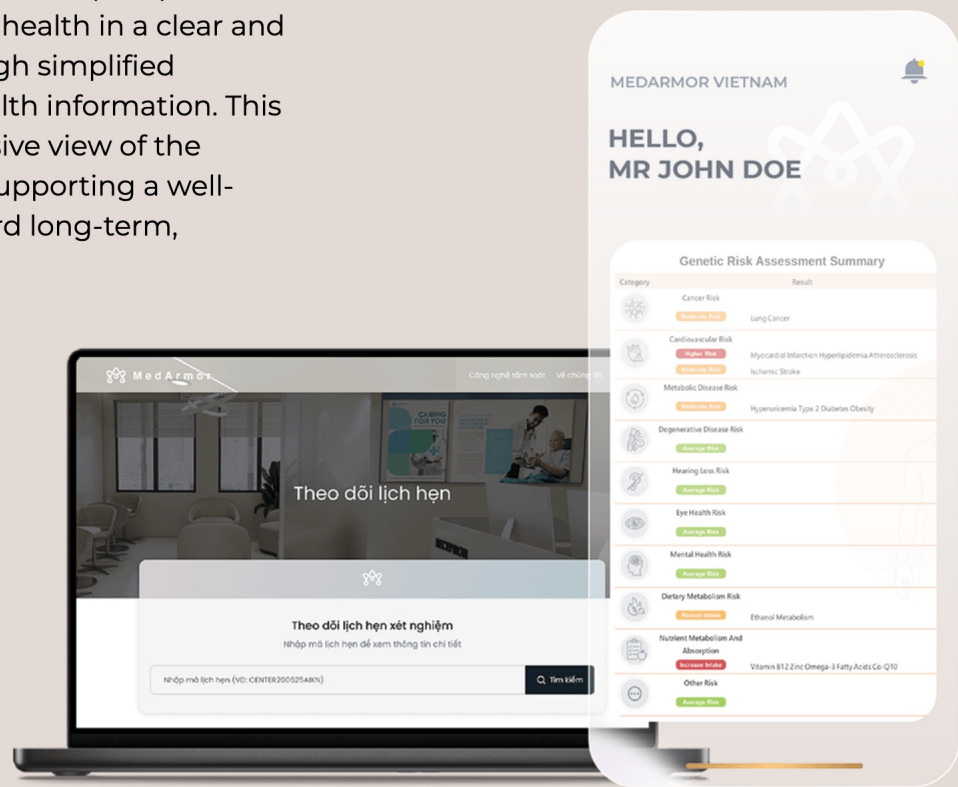
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The Electronic Health Record (EHR) enables clients to monitor their health in a clear and intuitive manner through simplified presentation of key health information. This provides a comprehensive view of the current health status, supporting a well-informed journey toward long-term, sustainable health.



Access your health records anytime, anywhere

We securely store your electronic health records and related information, allowing you to access them quickly and conveniently whenever needed.

Access via Web

You may also access your health reports by visiting: www.medarmor.vn

Access via QR Code

You can view your health reports by scanning the QR code provided in this report using your smartphone or tablet.

Electronic Health Records — the optimal solution for both clients and physicians

- Access your records anytime, anywhere
- Monitor your health more easily than ever
- High-quality data and imaging to support effective health management



Explore more

Mr. Nguyễn Văn A

Date of birth	22/10/1985
Gender	Male
Customer ID	24
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Personal History

Medical conditions previously or currently under treatment

Family History

Medical conditions previously or currently under treatment



SUMMARY AND RECOMMENDATION

I/ CLINICAL ASPECT

Vital signs: 74 beats/min; Blood pressure: 106/72 mmHg; SpO2: 97% Symptoms of physical and functional condition: Dry skin, dry lips, Heart rate regular and clear, lungs clear, abdomen soft. Medical history: Type 2 diabetes mellitus.

II/ PARACLINIC INVESTIGATION

Genetic analysis:

High risk: Hypertension, Atherosclerosis, Type 2 Diabetes Mellitus, Obesity, Osteoporosis, Age-related Macular Degeneration. Moderate risk: Ischemic Stroke. Need to increase absorption: Alcohol. Need to decrease absorption: Zinc, Omega-3 Fatty Acids, Co-Q10. Some hereditary disease factors with high genetic predisposition: Hypertension, Atherosclerosis, Type 2 Diabetes Mellitus, Osteoporosis.

Blood work:

Glucose: 11.2 mmol/l; HbA1c: 9.7%, Cholesterol: 5.22 mmol/l; Triglyceride: 1.92 mmol/l; LDL-C: 3.42 mmol/l

ECG:

Sinus rhythm is regular at 71 beats per minute; central axis.

Inbody:

III/ Conclusion

Type 2 diabetes mellitus - Dyslipidemia.



IV/ Recommendation

Current treatment:

Endocrinology examination: Blood glucose control; lipid control. Medications: Glyxambi 25mg/5mg; Rosuvastatin 10mg (attached prescription)

Nutrition:

The food group to be enhanced (2-3 times/day): rich in lutein and zeaxanthin (spinach, kale, amaranth, corn, egg yolk), whole grains (brown rice, oats), rich in omega 3 (fatty fish: salmon, sardines, herring, olive oil), rich in protein (lean meat, eggs, low-fat milk, nuts). The food group to be limited (1-2 times/week): salt < 5 grams/day (instant noodles, processed foods), red meat, fried foods. Drink enough water, at least 2.5 liters/day. Divide meals into smaller portions, use small bowls and plates to control portion sizes; avoid eating late after 7 PM. Limit alcohol and alcoholic beverages to a maximum of 150 ml of wine, 330 ml of beer with 5% alcohol, or 40 ml of spirits per day. Minimize exposure to tobacco smoke. Wear sunglasses to limit exposure to UV rays. Exercise at least 150 minutes/week: aerobic exercise, brisk walking, resistance training, light weightlifting. Get enough sleep, 7-8 hours/day. Supplement: Calcium 1000-1200 IU/day; vitamin D: 600-800 IU/day.

Monitoring:

Weight control to ensure BMI < 23 and waist circumference < 80cm. Regular check-ups every 3 months: lipid profile, HbA1c, glucose. Health check-ups every 6 months, with some issues to pay attention to: blood pressure, complete blood count, kidney function (urea, creatinine, electrolyte panel 3 parameters, Albumin/creatinine ratio; 10 parameters for metabolic syndrome); liver enzymes (AST, ALT, GGT), AFP, vitamin D quantification, ionized calcium, total calcium, zinc. Echocardiogram, abdominal ultrasound, ECG measurement. Stroke screening: carotid artery Doppler ultrasound, blood glucose monitoring, LDL-C levels. Cardiology consultation if blood pressure $\geq$ 140/90 mmHg for early treatment advice. Osteoporosis screening: Bone mineral density measurement using DEXA method annually. Age-related macular degeneration screening: Regular ophthalmology check-ups every 12 months; consider OCT imaging for early detection of retinal damage.



GENETIC ANALYSIS RESULTS

Genetic decoding represents a significant advancement in proactive, science-based, and sustainable personal healthcare. Each individual carries a unique genetic blueprint, and understanding this biological information enables more informed decisions regarding nutrition, lifestyle, and disease prevention.



This report is developed using GenoGuard™ genetic decoding technology, which applies a multi-locus risk scoring algorithm to analyze hundreds of genetic variants associated with:

- The risk of common chronic diseases such as cardiovascular conditions, cancer, diabetes, dyslipidemia, osteoporosis, and age-related macular degeneration
- The body's ability to metabolize essential nutrients including zinc, omega-3, vitamin B12, vitamin D, folate, and others
- Sensitivity to substances such as caffeine, alcohol, and acetaldehyde
- Genetic markers that may influence drug efficacy or the risk of adverse reactions (pharmacogenomics)
- Hereditary traits that may be shared within the family

Through comprehensive analysis and personalized recommendations, the purpose of this report is not to provide a clinical diagnosis, but to:

- Help you gain a deeper understanding of your body at the genetic level
- Identify early risk tendencies and support proactive prevention
- Guide personalized lifestyle, nutrition, and health monitoring strategies

While genetic code cannot be changed, understanding it allows individuals to make more appropriate lifestyle choices aligned with their unique biological profile, thereby reducing future health risks.

The objective of this test is to assess genetic disease predisposition, nutrient metabolism capacity, drug response, and inherited factors. The results are not intended for clinical diagnosis, but rather to support personalized health management strategies.

This report utilizes advanced PCR-on-chip technology to provide a comprehensive evaluation of your genetic profile, based on the analysis of more than 1,500 SNPs (Single Nucleotide Polymorphisms). SNPs are small variations in DNA where a single "letter" (A, T, C, or G) differs between individuals. These variations play a critical role in determining susceptibility to genetic conditions such as cancer, cardiovascular diseases, and diabetes.



3DMATRIX TECHNOLOGY – MECHANISM OF ACTION

1. General Principle

- 3DMatrix is an advanced genetic analysis platform designed to predict disease risk and guide personalized prevention strategies.
- The system integrates genetic decoding technology with artificial intelligence (AI) to:
 - a. Analyze hundreds of genetic variants (SNPs) associated with health outcomes.
 - b. Integrate multi-omics data layers, including genomics, metabolism, and biochemical test results.
 - c. Calculate a composite risk score (multi-locus risk score) for each disease category.

2. Analysis Workflow

Step 1. Sample Collection

- Clients provide a blood or saliva sample.
- DNA is then extracted and prepared for analysis.

Step 2. Genetic Variant Detection (SNPs)

- Core technologies: qPCR / Microarray genotyping to detect single nucleotide polymorphisms (SNPs).
- These SNPs serve as validated genetic markers, supported by international research, associated with various disease risks.

Step 3. Multi-omics Data Integration

- Data is integrated from multiple biological layers, including:
 - Genetic information (DNA)
 - Blood and biochemical tests (lipids, glucose, liver enzymes, etc.)
 - Lifestyle and environmental factors (smoking, alcohol consumption, diet, physical activity)
- AI models and statistical algorithms are then applied to analyze the interactions and correlations between these factors.

Step 4. Composite Risk Score

- Instead of relying on a single gene, 3DMatrix calculates risk scores based on clusters of multiple SNPs analyzed simultaneously.
- For example, in assessing cardiovascular risk, the system evaluates SNPs across genes such as APOB, LDLR, LPA, APOA5, and others to provide a more accurate and clinically relevant risk estimation.

Step 5. Clear and Interpretable Result Presentation

- Results are organized into risk clusters, including: Cardiovascular, Cancer, Metabolic (diabetes, gout, obesity), Neurological (Parkinson's disease, depression), Vision, Hearing, Nutrition.
- Each cluster is categorized into risk levels: Average – Moderate – High.
- The report is accompanied by clear explanations of underlying mechanisms, clinical relevance, and personalized recommendations on lifestyle, nutrition, and medical screening.



3. Key Advantages of 3DMatrix

- **Beyond single-gene testing:** 3DMatrix is a multi-factor integrated analysis system, not limited to individual genetic markers.
- **AI-driven intelligence:** Trained on both Asian and global population datasets, enhancing predictive accuracy.
- **Early risk prediction:** Identifies potential health risks before clinical symptoms appear.
- **Personalized approach:** Each individual receives tailored prevention strategies and health management plans based on their unique profile.



Explanation of Risk Levels

Risk Level	Explanation
Higher Risk	Multi-locus Item: The comprehensive genetic risk ranking for multiple loci is greater than 85% within the population. Single-locus Item: Your genotype corresponds to one of the following conditions: • Recessive Inheritance: Homozygous variant at a disease-associated gene locus. • Dominant Inheritance: Homozygous or heterozygous variant at a disease-associated gene locus.
Moderate Risk	Multi-locus Genetic Testing Item: The comprehensive genetic risk ranking for multiple loci is greater than 70% within the population. Single-locus Genetic Testing Item: Heterozygous variant at a disease-associated gene locus with recessive Inheritance.
Average Risk	Multi-locus Genetic Testing Item: The comprehensive genetic risk ranking for multiple loci is less than or equal to 70% within the population. Single-locus Genetic Testing Item: No variant genotype was detected at the selected loci in this test.
Increased Intake	Multi-locus Genetic Testing Item: The comprehensive genetic risk ranking for multiple loci is greater than 70% within the population, indicating that the absorption or intake efficiency of this nutrient may be lower. Increased intake is recommended. Single-locus Genetic Testing Item: The gene contains a homozygous or heterozygous variant at the tested locus.
Reduce Intake	Multi-locus Genetic Testing Item: The comprehensive genetic risk ranking for multiple loci is greater than 70% within the population, suggesting that the metabolism efficiency of this dietary sensitivity component may be lower. Reduced intake is recommended. Single-locus Genetic Testing Item: The gene contains a homozygous or heterozygous variant at the tested locus.
Normal Intake	Multi-locus Genetic Testing Item: The comprehensive genetic risk ranking for multiple loci is less than or equal to 70% within the population, indicating that the absorption or metabolism efficiency of this nutrient or dietary sensitivity component is likely similar to that of the general population. Maintaining a normal intake is sufficient. Single-locus Genetic Testing Item: No variant genotype was detected at the selected loci in this test.



Genetic Risk Assessment Summary

Category	Result
 Cancer Risk Average Risk Colorectal cancer	
 Cardiovascular Risk Higher Risk Moderate Risk Hypertension, Atherosclerosis Cerebral Ischemic Stroke	
 Metabolic Disease Risk Higher Risk Type 2 diabetes, Obesity	
 Degenerative Disease Risk Higher Risk Osteoporosis	
 Hearing Loss Risk Average Risk	
 Eye Health Risk Higher Risk Age-related macular degeneration	
 Mental Health Risk Average Risk	
 Dietary Metabolism Risk Reduce Intake Alcohol.	
 Nutrient Metabolism And Absorption Increased Intake Zinc Omega-3 Fatty Acids Co-Q10	
 Other Risk Average Risk	



Genetic Risk Assessment Results and Recommendations

Comprehensive Recommendations

If your genetic risk assessment result indicates a “higher risk” or “moderate risk”, it means you may carry genetic variants associated with an increased risk of the related condition. This result does not guarantee that you will develop the disease, but it may indicate a higher likelihood. Therefore, we recommend making appropriate lifestyle adjustments and undergoing regular health check-ups to facilitate early detection and monitoring of potential health risks, helping you maintain overall well-being. If you have any concerns regarding your test results, we advise consulting a specialist for professional guidance and discussing a personalized health management strategy to reduce disease risk. Please consider genetic testing results as a supplementary reference for health management. When necessary, consult medical professionals, and follow the physician’s evaluation and recommendations as the primary basis for health decisions.

Category	Suggestion
 Cardiovascular Risk	• Cerebral ischemic stroke: The results indicate a moderate risk. You should follow a light diet rich in fiber (vegetables, fruits, whole grains), exercise regularly, avoid smoking, consume alcohol in moderation, and monitor blood pressure, blood lipids, and blood glucose. • Hypertension: Your results fall into the high-risk category. It is advisable to prioritize a light diet, increase green vegetables and whole grains, avoid high-sodium (salt) and high-fat foods, and regularly monitor blood pressure. • Atherosclerosis: Your results fall into the high-risk category. Maintain a low-fat, low-sodium diet, engage in moderate physical activity, and regularly monitor blood pressure as well as blood lipids to support and protect cardiovascular health.
 Metabolic Disease Risk	• Type 2 diabetes: Your results fall into the high-risk group. Maintain a balanced diet, increase fiber-rich foods, exercise regularly, and monitor blood glucose levels periodically. • Obesity: Your results fall into the high-risk group. It is advisable to prioritize a light diet, increase fiber and green vegetables, engage in regular physical activity, and monitor weight and body fat percentage to maintain a healthy condition.



Category	Suggestion
 Degenerative Disease Risk	• Osteoporosis: Your results fall into the high-risk group. Ensure adequate intake of calcium and protein, engage in regular physical exercise, have moderate sun exposure, and avoid smoking, alcohol, and excessive caffeine consumption to maintain bone health.
 Eye Health Risk	• Age-related macular degeneration: Results indicate a high risk. You should consume foods rich in lutein, vitamins A and C (spinach, carrots, tomatoes, blueberries), avoid smoking and excessive sun exposure, and have regular eye examinations.
 Dietary Metabolism Risk	• Alcohol metabolism – Ethanol: The results indicate a need to reduce consumption. The process of acetaldehyde formation is faster, which may increase health risks. You should limit alcohol intake, maintain regular physical activity, adopt a healthy lifestyle, and have regular health check-ups.
 Nutrient Metabolism And Absorption	• Zinc: The results indicate a need for increased supplementation. You should enhance your intake of zinc-rich foods (liver, fish, pumpkin seeds, black sesame) and maintain a healthy lifestyle to support immune function and normal physiological function. • Omega-3 Fatty Acids: The results indicate a need for increased supplementation. You should consume fish rich in EPA and DHA (such as salmon, sardines) at least 2 times a week, and you may use flaxseed oil or chia seeds in moderation, or supplement as per professional advice to support cardiovascular and brain health. • Coenzyme Q10: Your results indicate a need for increased supplementation. It is recommended to increase the consumption of CoQ10-rich foods (such as organ meats, fish), combined with moderate physical exercise to support cardiovascular and muscle function.

Category	Item	Risk Level	Results
 Cancer Risk	Colorectal Cancer		Average Risk
	Lung Cancer		Average Risk
	Breast Cancer	-	-
	Prostate Cancer	-	-
 Cardiovascular Risk	Hereditary Stroke		Average Risk
	Ischemic Stroke		Moderate Risk
	Familial Hypercholesterolemia		Average Risk
	Myocardial Infarction		Average Risk
	Hypertension		Higher Risk
	Dyslipidemia		Average Risk
	Atherosclerosis		Higher Risk
 Metabolic Disease Risk	Hyperuricemia		Average Risk
	Gout		Average Risk
	Type 2 Diabetes Mellitus		Higher Risk
	Obesity		Higher Risk
 Degenerative Disease Risk	Parkinson's Disease		Average Risk
	Osteoporosis		Higher Risk
 Hearing Loss Risk	Late-Onset Hearing Loss		Average Risk
	Drug-Induced Hearing Loss		Average Risk



Category	Item	Risk Level	Results
 Eye Health Risk	Age-Related Macular Degeneration		Higher Risk
 Mental Health Risk	Major Depressive Disorder		Average Risk
 Dietary Metabolism Risk	Alcohol Metabolism		Reduce Intake
	Caffeine Metabolism		Normal Intake
	Acetaldehyde Metabolism		Normal Intake
 Nutrient Metabolism And Absorption	Vitamin A		Normal Intake
	Vitamin D		Normal Intake
	Vitamin B12		Normal Intake
	Axit folic (Vitamin B9)		Normal Intake
	Canxi		Normal Intake
	Zinc		Increased Intake
	Omega-3 Fatty Acids		Increased Intake
	Coenzyme Q10 (CoQ10)		Increased Intake
 Other Risk	Androgenetic Alopecia	-	-



Genetic test results related to cardiovascular risk

Category	Item	Gen	Gen Type	Results
 Cardiovascular Risk	Hereditary Stroke	NOTCH3	GG	Average Risk
	Ischemic Stroke	APOB	CT	Moderate Risk
	Familial Hypercholesterolemia	APOB	GG	Average Risk
		LDLR	CC	
		LDLR	GG	
	Myocardial Infarction	PSMA6	CG	Average Risk
		MIA3	AA	
	Hypertension	ATP2B1	AA	Higher Risk
		ATP2B1	TT	
		CASZ1	CC	
Dyslipidemia		CYP26A1	AG	Average Risk
		LDLR	AG	
		APOA5	AG	
Atherosclerosis		JCAD	CC	Higher Risk
		LPA	CT	

Ischemic Stroke - Moderate Risk

Explain:

- **APOB (CT – risk allele):** APOB is the main protein of LDL. Variant T makes LDL difficult to bind to the LDL receptor (LDLR) for clearance from the blood → high LDL, easily oxidized → adhere to the walls of the brain blood vessels → formation of atherosclerotic plaques. When the plaque ruptures → occlusion of the brain blood vessels.

Meaning:

- **Moderate risk** increases significantly when there is **hypertension, diabetes mellitus, smoking**.

Recommendation:

- Monitor **blood pressure, lipid levels, blood glucose** every 6–12 months.
- **Mediterranean diet**; if LDL is high, consult with a physician about statins.
- Consider **carotid Doppler ultrasound** after age 45–50 if there are multiple risk factors.



Hypertension - Higher Risk

Explain:

- **ATP2B1 (AA, TT):** This gene encodes for the calcium ATPase pump involved in regulating calcium levels in vascular smooth muscle cells. The deleterious variants (such as A or T) reduce the ability to regulate calcium flow, causing stronger vasoconstriction → increased peripheral resistance → predisposition to hypertension. Numerous GWAS studies have confirmed that SNPs at ATP2B1 are strongly associated with hypertension in Asian populations.
- **CASZ1 (CC):** CASZ1 is involved in the development of the cardiovascular system and the regulation of vascular function. The C variant is associated with increased vasoconstrictor activity and an elevated risk of hypertension.
- **Cumulative factors:** When carrying both risk variants at ATP2B1 and CASZ1, the synergistic effect reduces the ability to vasodilate, increasing the burden of hypertension.

Meaning:

- You have a high risk of hypertension. This does not necessarily mean you have the disease, but the risk is higher than the general population, especially when accompanied by environmental factors (high salt intake, stress, lack of exercise, obesity).
- If high blood pressure persists, the risk of cardiovascular complications (myocardial infarction, stroke, heart failure, chronic kidney disease) will significantly increase.

Recommendation:

1. Monitoring and screening

- Measure blood pressure regularly 1–2 times/month, especially if there is a family history of hypertension. This report assesses specific hereditary risk factors solely for health consultation purposes, not for clinical diagnosis or medical treatment.
- Check blood lipids and blood glucose regularly to detect early accompanying risk factors.
- **Dietary regimen**
 - Limit salt to < 5g/day (reduce fish sauce, salted foods, instant noodles).
 - Prioritize a diet rich in green vegetables, fruits, whole grains, fish, and legumes.
 - Reduce red meat and foods fried in excessive oil.
 - Limit strong coffee, alcoholic beverages, and drinks containing alcohol.

2. Lifestyle

- Maintain a reasonable weight, avoid overweight/obesity.
- Exercise at least 150 minutes/week (brisk walking, cycling, swimming).
- Get enough sleep 7–8 hours/day, limit stress, practice meditation or yoga to stabilize the autonomic nervous system.

3. Others

- If blood pressure is detected $\geq 140/90$ mmHg multiple times, it is necessary to consult a cardiology specialist for early advice and treatment.



Atherosclerosis - Higher Risk

Explain:

Gene JCAD (Junctional Cadherin 5 Associated) - CC genotype - risk homozygote

- JCAD participates in regulating the function of endothelial cells at the vessel wall.
- The C variant reduces the ability to resist oxidative stress and inflammation of the endothelium.
- Damaged endothelium is the "gateway" initiating atherosclerosis → cholesterol easily infiltrates and accumulates.

Results: Individuals carrying the CC genotype significantly reduce the protective function of the endothelium, with a higher risk of atherosclerosis compared to normal individuals.

Gene LPA (Lipoprotein(a)) - CT genotype - risk heterozygote

Meaning:

- The LPA gene encodes apolipoprotein(a), the main component of lipoprotein(a) [Lp(a)].
- Risk allele C is associated with increased expression of Lp(a) in the blood.
- Lp(a) is similar to LDL but contains additional apolipoprotein(a), strongly adheres to the vascular wall, is easily oxidized, and causes inflammation.
- Lp(a) also inhibits plasminogen, reducing the ability to lyse fibrin → increasing the likelihood of thrombus formation.

The simultaneous presence of LPA CT (deleterious allele C) and JCAD CC (deleterious allele C) → increases cholesterol accumulation and disrupts endothelial cell function, thereby promoting atherosclerotic plaque formation.

This is a congenital risk, not entirely dependent on diet, but will be more severe if there is high LDL, smoking, hypertension, and diabetes.

Recommendation:

1. Testing & Screening

- Periodic testing of Lp(a) (at least once in a lifetime, if elevated → close monitoring).
- Periodic blood lipid testing every 6–12 months.
- Cardiovascular examination, Doppler ultrasound of the carotid arteries.

2. Diet & Lifestyle

- Follow a Mediterranean diet: plenty of green vegetables, fatty fish, olive oil, nuts; limit red meat and animal fats.
- Reduce salt (<5 grams/day): avoid processed foods.
- No smoking, limit alcohol consumption.

3. Lifestyle

- Engage in moderate exercise ≥150 minutes/week (brisk walking, cycling, swimming).
- Maintain a healthy weight, waist circumference <80cm for females.
- Manage stress, ensure adequate sleep.



Genetic test results related to metabolic disease risk

Category	Item	Gen	Gen Type	Results
 Metabolic Disease Risk	Tăng acid uric máu	ABCG2	GG	Average Risk
	Gout	SLC2A9	AG	Average Risk
		SLC2A9	TT	
	Type 2 Diabetes Mellitus	KCNQ1	CC	Higher Risk
		PSMD6	CC	
		GCKR	CT	
	Obesity	FTO	AT	Higher Risk
		FTO	AC	
		MC4R	CT	

Type 2 Diabetes Mellitus - Higher Risk

Explain:

- **KCNQ1 (CC - risk homozygous):** K⁺ channel in pancreatic beta cells; **risk allele C** associated with **impaired insulin secretion postprandially**.
- **PSMD6 (CC - risk homozygous):** component of the proteasome; **risk allele C** reduces abnormal protein degradation → endoplasmic stress, affecting insulin signaling.
- **GCKR (CT - risk heterozygous):** regulates glucokinase in the liver. **Risk allele C** reduces binding → liver does not respond well to glucose → increased blood sugar postprandially.

Meaning:

- **High risk** of hyperglycemia, insulin resistance

Recommendation:

- **Screening:** Annual blood glucose and HbA1c testing (earlier if overweight).
- **Nutrition:**
 - Reduce refined carbohydrates (white rice, white bread).
 - Increase whole grains, vegetables, legumes.
 - Limit sweets, sugary drinks.
- **Lifestyle:**
 - Lose 5–7% of body weight if BMI >23, maintain BMI <23, waist circumference <80cm.
 - Exercise ≥150 minutes/week.
- **Healthcare:** If blood glucose is high → endocrinology consultation for early intervention.



Obesity - Higher Risk

Explain:

- **FTO (AT/AC – adverse heterozygote):**
 - The FTO gene is involved in regulating the control of **hunger and satiety** through the hypothalamus.
 - Adverse alleles (A or C) increase FTO expression, thereby promoting **white fat storage** rather than **brown fat burning**.
 - Individuals carrying this variant are more likely to **overeate**, have less sensation of satiety, and are at increased risk of **higher BMI and waist circumference**.
- **MC4R (CT – high-risk heterozygote):**
 - The MC4R gene is the "central switch" to inhibit food intake when leptin and insulin levels rise.
 - **Allele C** is an adverse allele that reduces MC4R sensitivity → **the brain receives the "not full" signal slower**, leading to increased food intake and cravings for sweets – obesity.
 - Additionally, **allele C** is associated with **abdominal fat distribution** – increasing the risk of **metabolic syndrome** (Type 2 diabetes, cardiovascular issues).

Meaning:

- You have a **high risk** of **weight gain and abdominal obesity**, especially when:
 - The diet is high in calories, with a lot of sugar and saturated fats.
 - A sedentary lifestyle.
- Genetic obesity **is not certain**, but your body tends to accumulate fat more easily, so it is necessary to have a **proactive strategy to maintain weight**.

Recommendation:

Nutrition:

- Prioritize a **Mediterranean or DASH diet**:
 - **Increase vegetables, fruits, whole grains, fish, olive oil, nuts.**
 - Reduce red meat, fast food, sugary drinks, fried foods.
- **Energy control**:
 - Divide meals into smaller portions, avoid late-night eating.
 - Use small bowls/plates to control portion sizes.
 - **Adequate protein (1.0–1.2 g/kg body weight/day)** to maintain muscle mass.

Exercise:

- **Aerobic exercise** (brisk walking, light jogging, swimming, cycling) at least **150 minutes/week**.
- **Resistance training** (weights, resistance bands, bodyweight) 2–3 sessions/week to increase muscle and reduce fat.
- Add light daily activities: take the stairs, stand instead of sitting, walk after meals.

Monitoring:

- **Weight and waist circumference** monthly (women < 80 cm is safe).
- **Blood glucose, blood lipids, blood pressure** every 6–12 months to detect metabolic syndrome early.

Behavioral support:

- Get enough sleep 7–8 hours/night (lack of sleep increases ghrelin, decreases leptin → leads to overeating).



Genetic test results related to degenerative disease risk

Category	Item	Gen	Gen Type	Results
 Degenerative Disease Risk	Parkinson's Disease	SNCA	GT	Average Risk
		SNCA	AG	
		LRRK2	GG	
		SV2C	AG	
	Osteoporosis	VDR	AA	Higher Risk
		ESR1	AA	
		FGFR2	AA	



Osteoporosis - Higher Risk

Explain:

VDR (AA – risk homozygote):

- The VDR gene (Vitamin D Receptor) is the "switch" for vitamin D activity, helping to absorb calcium from the intestine.
- The disadvantageous allele A reduces the sensitivity of the VDR receptor to vitamin D → less calcium absorption, mineral deficiency in bones → increased brittleness and osteoporosis.
- International studies show that individuals carrying this allele have a 2–3 times higher risk of fractures compared to normal individuals.

ESR1 (AA – risk homozygote):

- The ESR1 gene encodes the estrogen receptor alpha, regulating the effects of estrogen on bones.
- The disadvantageous allele A reduces estrogen signaling → bones are less protected, particularly important in older men when testosterone decreases (as part of the hormone converts to estrogen to protect bones).

FGFR2 (AA – risk homozygote):

- FGFR2 is involved in the proliferation and differentiation of osteoblasts.
- The disadvantageous allele A is associated with low bone density, and bones lose minerals more rapidly with age.

Meaning:

- You have a higher risk of osteoporosis than the general population due to carrying many adverse mutations.
- If not prevented, the risk of hip fractures, spinal fractures, and wrist fractures increases significantly as you age.

Recommendation:

Examination and monitoring:

- Perform DEXA scan (bone density measurement), repeat every 1–2 years.

Nutrition:

- Calcium: 1,000–1,200 mg/day (from low-fat milk, small fish eaten with bones, tofu).
- Vitamin D: 800–1,000 IU/day (from sunlight, fatty fish, or supplements).
- Adequate protein (≥ 1 g/kg body weight/day).

Lifestyle:

- Engage in weight-bearing exercises (walking, stair climbing, light weights) and balance exercises (yoga, tai chi) to reduce fall risk.
- Avoid smoking, limit alcohol and caffeine (which can deplete calcium in bones).
- Ensure home safety, with adequate lighting to prevent falls.



Genetic test results related to eye health risk

Category	Item	Gen	Gen Type	Results
 Eye Health Risk	Age-Related Macular Degeneration	ARMS2 TNFRSF10A	TT GT	Higher Risk



Age-Related Macular Degeneration - Higher Risk

Explain:

- Genetic test results indicate: **High risk**.
- Main genes involved in the profile:
 - **ARMS2 (TT – risk homozygote):** Allele **T** is the risk allele. This is a strong disadvantageous variant, associated with oxidative stress and drusen accumulation in the retina. Individuals carrying TT have a risk of AMD that is **2–3 times** higher than those without the variant.
 - **TNFRSF10A (GT – risk heterozygote):** regulates apoptosis. **Disadvantageous variant G** makes the retina more susceptible to cell death under stress.
- Pathophysiological mechanism:
 - Oxidative stress + dysregulation of apoptosis in the macular region → accumulation of abnormal cells and drusen → degeneration of the macula.

Meaning:

- You have a **high risk of developing AMD as you age**, especially after 55–60 years old.
- AMD does not cause complete blindness, but it leads to **central vision loss**, making it difficult for you to read, drive, and recognize faces.
- With a high genetic risk, if combined with additional factors such as **smoking, low vegetable intake, and high UV exposure**, the disease is likely to appear earlier.

Recommendation:

1. Regular eye screening

- Comprehensive eye examination every **12 months** after age 50, or earlier if symptoms occur (blurry vision, distorted shapes, loss of central vision).
- OCT retinal imaging when necessary to detect early damage.

2. Eye protective nutrition

- Consume foods rich in **lutein and zeaxanthin**: green vegetables (spinach, kale, amaranth), corn, egg yolk.
- Supplement with **omega-3 (salmon, sardines, herring)** to help reduce retinal inflammation.
- Consider using **eye supplements based on the AREDS2 formula** (vitamin C, E, lutein, zeaxanthin, zinc, copper) if recommended by an ophthalmologist.

3. Lifestyle

- Absolutely **do not smoke** (the strongest risk factor).
- Limit alcohol consumption.
- Wear sunglasses when outdoors to reduce UV radiation.



Genetic test results related to dietary metabolism risk

Category	Item	Gen	Gen Type	Results
 Dietary Metabolism Risk	Alcohol Metabolism	ADH1B	CT	Reduce Intake
	Acetaldehyde Metabolism	ALDH2	GG	Normal Intake
	Chuyển hóa caffeine	CYP1A2 ADORA2A	AA CC	Normal Intake

Alcohol Metabolism - Reduce Intake

Explain:

• Alcohol metabolism:

- When consuming alcohol, ethanol is converted into **acetaldehyde** (a toxic substance) by the **ADH1B** gene.
- Subsequently, acetaldehyde is reduced to acetate by the **ALDH2** gene.
- You have:
 - **ADH1B CT (disadvantageous T allele)** → converts alcohol to acetaldehyde faster than normal individuals → produces more toxins.
- This makes the body more prone to **flushing, rapid heartbeat, headaches** when consuming large amounts of alcohol, while also increasing the risk of **liver damage and esophageal, gastric cancer** if consumed long-term.

Meaning:

- You have a **high risk of alcohol-related harm** when consuming large amounts.

Recommendation:

- It is best **not to drink too much alcohol**.
- **Monitor health**
 - Check liver enzymes, ultrasound of the liver annually.
 - If there are any unusual symptoms (flushed face, rapid heartbeat, discomfort when drinking alcohol) → it is advisable to stop completely and consult a doctor.



Genetic test results related to nutrient metabolism and absorption risk

Category	Item	Gen	Gen Type	Results
 Nutrient Metabolism And Absorption	Vitamin A	BCO1	GG	Normal Intake
		BCO1	CC	
	Vitamin D	CYP2R1	GG	Normal Intake
		GC	TT	
	Vitamin B12	TCN1	AA	Normal Intake
		CUBN	GG	
		MS4A3	CC	
	Axit folic (Vitamin B9)	MTHFR	GG	Normal Intake
		MTRR	AA	
	Canxi	GCKR	CT	Normal Intake
		CAR1	AG	
	Zinc	SLC39A14	GG	Increased Intake
	Omega-3 Fatty Acids	FADS1	GG	Increased Intake
	Coenzyme Q10 (CoQ10)	HNF4A	AG	Increased Intake



Zinc - Increased Intake

Explain:

- **SLC39A14 (GG – homozygous risk):** belongs to the strong **ZIP** (zinc importer) family. **G loss-of-function allele** in the panel is associated with **reduced efficiency of Zn^{2+}** transport from extracellular space into hepatocytes/endothelial cells → **lower intracellular zinc levels** under suboptimal dietary conditions.
- You have a loss-of-function variant → reducing the capacity to transport zinc.
- This may lead to poor zinc absorption.

Meaning:

- You are at risk of **decreased zinc absorption** → more likely to be deficient if demand increases or if the diet is low in zinc.
- Zinc deficiency affects immunity, taste perception, wound healing, and skin and hair health.

Recommendation:

- Eat a lot of lean meat and various types of nuts.
- Limit whole grains that contain high levels of phytate (which inhibit zinc absorption).
- Test for micronutrients if there are signs of zinc deficiency.



Omega-3 Fatty Acids - Increased Intake

Explain:

- **FADS1/FADS2 gene:** involved in the metabolism of ALA (from plant sources) into EPA/DHA.
- You have a **loss-of-function variant G** → leading to reduced efficiency of this metabolism.
- Result: difficulty in synthesizing sufficient EPA/DHA if only consuming plant oils and seeds.

Meaning:

- You are at risk of **EPA/DHA deficiency**, affecting cardiovascular health, anti-inflammatory response, and brain function.

Recommendation:

- Eat fatty fish (salmon, mackerel, herring) 2–3 times/week.
- If consuming little fish → supplement with fish oil or omega-3 capsules.
- Check blood lipids, especially triglycerides.

Coenzyme Q10 (CoQ10) - Increased Intake

Explain:

- **HNF4A (AG – high-risk heterozygote):**
 - HNF4A is a critical transcription factor involved in lipid metabolism, glucose metabolism, and regulation of CoQ10 synthesis (ubiquinone) in mitochondria.
 - **Alen G** partially reduces HNF4A activity → cells decrease CoQ10 synthesis.
 - Consequences: decreased cellular energy, especially in the heart and skeletal muscle → increased fatigue, higher risk of cardiovascular disease.

Meaning:

- You have a risk of **endogenous CoQ10 deficiency**, which reduces antioxidant capacity and protects the heart – muscle.
- This deficiency may exacerbate the condition of **lipid metabolism disorders and cardiovascular disease**.

Recommendation:

- **Nutrition:**
 - Consume foods rich in CoQ10: salmon, mackerel, liver, animal heart, vegetable oils.
- **Supplementation:**
 - Consider supplementing with CoQ10 at a dose of **100–200 mg/day**, especially when there are lipid disorders or when using statins (statins reduce CoQ10).
- **Lifestyle:**
 - Engage in moderate exercise (brisk walking, swimming, yoga) to improve mitochondrial function.
- **Monitoring:**
 - Regularly measure blood lipids, liver enzymes, and cardiac function.



Genetic risk for children when carrying SNPs risk

1. Genetic inheritance mechanism of SNPs risk

In the DNA of each person, there are millions of small differences called SNPs (Single Nucleotide Polymorphisms – single nucleotide variations). Most SNPs are harmless, but some SNPs are called risk SNPs because they increase the risk of disease.

- If the father or mother carries a harmful variant (heterozygous), the probability of passing that variant to the child is 50%.
- If the father or mother carries two harmful variants (homozygous), the child is certain to inherit at least one harmful variant, and may inherit both if the other parent also carries the variant.
- If both parents carry harmful SNPs, the probability of the child inheriting both harmful variants (homozygous) is much higher, increasing the risk of disease.

This inheritance mechanism explains why in a family, many people may have the same disease (e.g., diabetes, gout, heart disease). However, there are cases where people with the same risk SNPs may develop the disease, while others remain healthy – because besides genetics, environmental factors, lifestyle, and nutrition also play a decisive role.

2. Practical meaning for children

When a customer discovers a risk SNP in the 3DMATRIX report, this not only has meaning for themselves but also has value in guiding preventive measures for their children:

a) Increased likelihood of passing on unfavorable variants

For example, if a mother carries a variant in the MTHFR gene (related to folate metabolism), there is a 50% chance the child will inherit this variant. This makes the child more prone to elevated homocysteine levels, increasing the risk of cardiovascular disease and pregnancy complications.

b) Cumulative risk across generations

If both parents in a family carry the same unfavorable SNP, the child faces a significantly higher risk. This is the mechanism that explains why certain hereditary diseases 'run in families' across multiple generations.

c) Does not mean disease is inevitable

Carrying a risk SNP only increases the probability of developing a condition — it does not guarantee it. With an appropriate diet, a healthy lifestyle, and regular monitoring, the risk can be reduced to a level comparable to the general population.

3. Recommendations for family

- **Consider genetic counseling for your children:** especially when high-risk variants are identified (e.g., cardiovascular disease, cancer, osteoporosis).
- **Consider genetic screening for your children and grandchildren:** not mandatory, but it can help identify early who has inherited unfavorable SNPs.
- **Promote a healthy lifestyle from an early age:** whether or not a risk SNP is present, a balanced diet and regular exercise remain the key to reducing disease risk.
- **Schedule regular health check-ups:** for example, in families with cardiovascular risk SNPs, lipid panel testing is recommended starting from age 20.



In the detailed results table of the customer, SNPs related to increased disease risk and / or metabolic disorders with dominant / recessive characteristics and the risk of inheritance for children were found as follows:

Disease	Gen	Phenotype Genotype	Risk Allen	Hereditary Risk For Children
Ischemic Stroke	APOB	CT	T	50% of the offspring will inherit allele T (risk).
Hypertension	ATP2B1	AA	A	The child is certain to receive ≥1 allele A (risk)
	ATP2B1	TT	T	You are definitely receiving ≥1 T allele (risk)
	CASZ1	CC	C	You are sure to receive ≥1 allele C (risk)
Atherosclerosis	JCAD	CC	C	You definitely receive ≥1 allele C (risk)
	LPA	CT	C	50% of the offspring will inherit allele C (sensitive to acetaldehyde).
Type 2 Diabetes Mellitus	KCNQ1	CC	C	You definitely receive ≥1 allele C (risk)
	PSMD6	CC	C	You are certain to receive ≥1 allele C (risk)
	GCKR	CT	C	50% the child will inherit allele C (risk).
Obesity	FTO	AT	A	50% the child will inherit allele A (risk).
	FTO	AC	C	50% of the offspring will inherit allele C (risk).
	MC4R	CT	C	50% of the offspring will inherit allele C (risk).
Osteoporosis	VDR	AA	A	You are certain to receive ≥1 allele A (risk)
	ESR1	AA	A	You are certain to receive ≥1 allele A (risk)
	FGFR2	AA	A	You are sure to receive ≥1 allele A (risk)
Age-Related Macular Degeneration	ARMS2	TT	T	You definitely receive ≥1 T allele (risk)
	TNFRSF10A	GT	G	50% of the offspring will inherit the T allele (sensitive to acetaldehyde).



Disease	Gen	Phenotype Genotype	Risk Allen	Hereditary Risk For Children
Alcohol Metabolism	ADH1B	CT	T	50% of the offspring will inherit the T allele (sensitive to acetaldehyde).
Zinc	SLC39A14	GG	G	The child certainly carries ≥1 G allele (malabsorption).
Omega-3 Fatty Acids	FADS1	GG	G	The child definitely carries ≥1 allele G (malabsorption).
Coenzyme Q10 (CoQ10)	HNF4A	AG	G	50% of the offspring will inherit the G allele (sensitive to acetaldehyde).



Disclaimers and Limitations of Use

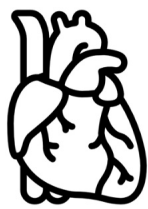
- This assessment analyzes specific genes and genetic loci to evaluate overall genetic risk related to disease susceptibility and nutrient metabolism (genetic loci are analyzed based on genotype). Because many diseases and metabolic processes involve multiple genes, this assessment does not cover all genes and genetic loci that may be relevant. Therefore, the results reflect only a portion of genetic risk and do not represent all possible scenarios.
- This report presents risk rankings based on genotype and does not directly reflect current or future health status. For example, a result of 'high risk' does not mean the individual will definitely develop the condition, and a result of 'moderate risk' does not equate to an extremely low risk. Environmental factors, diet, and other external influences also play an important role in shaping actual risk.
- Although genes influence disease risk and metabolism, environmental factors, lifestyle, and individual dietary habits are equally important. When referencing this report, personal habits and other health factors should also be taken into consideration. If you have any concerns, please consult a physician and follow the assessment and recommendations of a qualified medical professional as the primary basis for decision-making.
- Recommendations in this report such as 'increase intake', 'reduce intake', or 'maintain normal levels' are based on an analysis of genotype-based metabolic capacity. Recipients may adjust their diet according to personal needs and are encouraged to consult a nutritionist or physician when necessary, prioritizing professional guidance.
- This report is intended for reference purposes in health management only and should not be used as the sole basis for diagnosis or treatment. Medical professionals will need to incorporate additional clinical data and individual health status to assess risk and develop a comprehensive treatment plan.
- The results of this assessment may have significant implications for both the recipient and their family members. It is recommended to fully understand the content and limitations of this assessment both before and after testing, in order to support informed health decision-making.
- This report is intended solely for reference purposes in health management, does not replace medical devices or medical practice, and cannot substitute for professional medical advice, diagnosis, or treatment.



IMAGE DIAGNOSIS REPORT

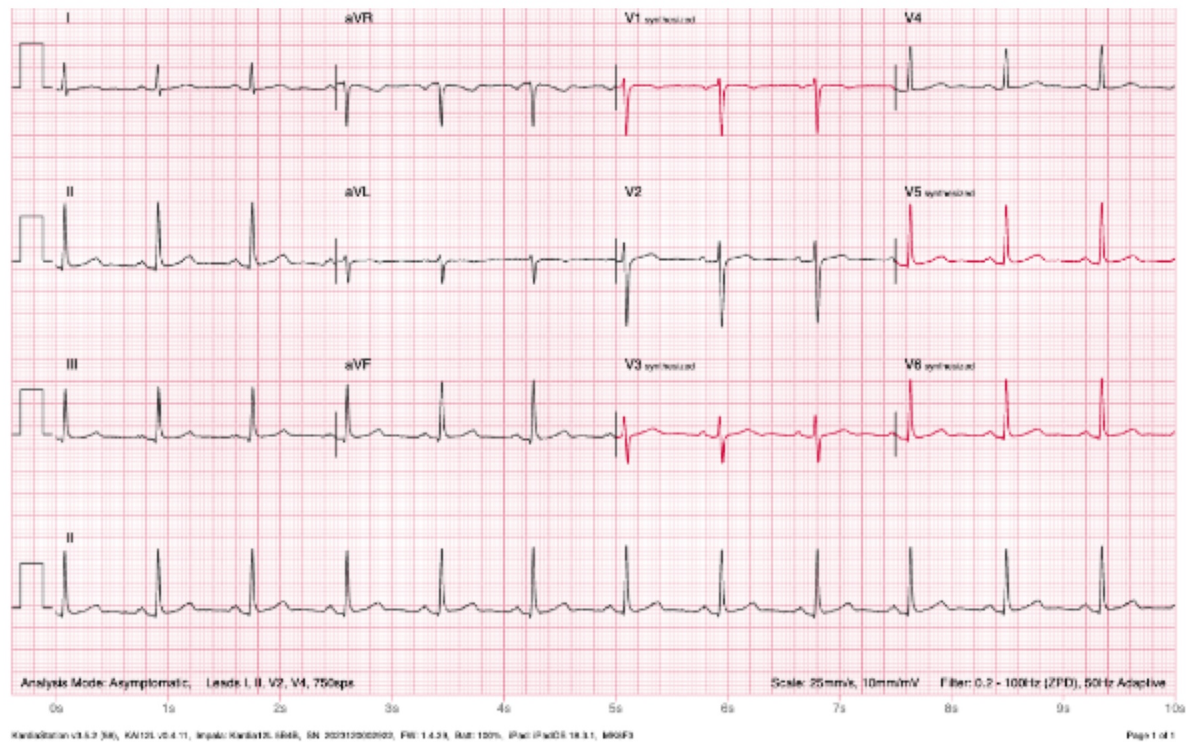
Diagnostic imaging is a crucial step in comprehensively assessing health status, early detection of hidden risks, and monitoring treatment effectiveness.

When combined with genetic analysis results, medical history, and clinical examination, this data helps develop personalized treatment protocols while providing appropriate preventive recommendations for the future.



Electrocardiogram (ECG)

An electrocardiogram is a simple, non-invasive technique for measuring the electrical activity of the heart, commonly referred to as an ECG or EKG. Each heartbeat is triggered by an electrical signal that originates at the top of the heart and travels downward. Heart conditions often affect the electrical activity of the heart.



Detailed results:

Normal

View Detail
Digital Profile

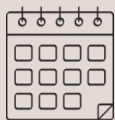






Quick & easy appointment

Step 1



Customer books an appointment

Step 2



Consultation before the test

Step 3



Customer arrives at MedArmor / nursing to take samples at home

Step 4



Explain the sequence and analyze DNA

Step 5



Analyze the report by AI

Step 6



Send report and book consultation

Step 7



Consultation of the report 1:1 with the doctor





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MedArmor Vietnam Co., Ltd.
33C Le Thanh Toan, Phuong Saigon, TP.HCM



028 665 11111



info@medarmor.vn



medarmor.vn