PERSONALIZED CARDIOVASCULAR PATHWAYS®

PRECISYA — PRECISION HEALTH

PATIENT: Mens sample
DATE: 22-10-2025

PROTECTIVE | NORMAL (HOMOZYGOUS) | NORMAL (HETEROZYGOUS) | RISK (HETEROZYGOUS) | RISK (HOMOZYGOUS)

PGx

RIVAROXABAN — Xarelto: VTE, Afib Stroke
CYP3A4 CYP3A5 rs35599367 rs776746 — Lower Metabolic Clearance, Higher Drug Levels, Higher Bleeding Risk. Higher Absorption.
ABCB1 rs1045642

HEPARIN — Anticoagulant (Short-term), VTE
SERPINC1 rs201381904 rs147266204 rs121909548 — Heparin Less Effective, Poor Anticoagulation.

WARFARIN — Blood Thinner
CYP2C9 rs1057910 rs1799853 — Lower Metabolism, Lower Dose needed, High Bleeding Risk

CLOPIDOGREL — Antiplatelet
CYP2C19 rs12248560 rs4986893 — Very poor metabolism, adjust dose carefully. Reduced dose needed. Poor metabolizer – avoid clopidogrel. Reduced efficacy.

ATORVASTATIN — Hyperlipidemia / Dyslipidemia
CYP3A4 rs2242480 SLCO1B1 rs4149056 ABCG2 rs2231142 — Higher side effects, higher drug levels

SIMVASTATIN — Hyperlipidemia / Hypercholesterolemia
SLCO1B1 rs4149056 CYP3A5 rs776746 — Higher risk myopathy at high doses. Strong myopathy risk, avoid high dose.

TACROLIMUS — Immunosuppressive
CYP3A5 rs776746 — Poor metabolizer, needs lower dose.

METOPROLOL — Hypertension, Angina
CYP2D6 rs5030865 rs5030655 rs28371725 — Reduced metabolism, adverse effects.

LOVASTATIN — LDL-C (Moderate reduction)
SLCO1B1 rs4149056 CYP3A4 rs35599367 CYP3A5 rs776746 — Higher or Moderate Plasma Levels. Muscle Pains.

APIXABAN — Venous Thromboembolism, Afib Stroke Prevention
CYP3A4 rs35599367 — Reduced clearance, Higher Drug Exposure, Higher Bleeding Risk.

PROPAFENONE — Paroxysmal Supraventricular Tachycardia, AF, V. Arrhyth.
CYP2D6 rs5030655 — Poor metabolizer, adverse effects.

NEBIVOLOL — Hypertension, Chronic H. Failure, AF, Tachyarrhythm.
CYP2D6 rs5030655 — Mild increase in drug exposure, adverse effects.
rs28371725

ROSUVASTATIN — Crestor: LDL-C, Dyslipidemia, Atherosclerosis
ABCG2 rs2231142 SLCO1B1 rs4149056 — Use Lower dose, drug builds up (muscle side effects)

DEBRISOQUINE — Hypertension
CYP2D6 rs5030865 — Poor metabolizer.

PRAVASTATIN — LDL-C (Moderate reduction)
ABCG2 rs2231142 SLCO1B1 rs4149056 — Lower Efflux.

PROPANOLOL — Hypertension, Angina, Arrhythmias, & Tremor
CYP2D6 rs5030655 — Poor metabolizer, adverse effects.

CARVEDILOL — Heart Failure (HFrEF), Hypertension, Angina, AF
CYP2D6 rs5030655 — Poor metabolizer, adverse effects.

PITAVASTATIN — LDL-C
SLCO1B1 rs4149056 UGT1A3 rs1983073 — Mild Exposure

FLUVASTATIN — Low potency statin, LDL-C
CYP2C9 rs1057910 SLCO1B1 rs4149056 — Poor metab.

IVABRADINE — Heart Failure with Reduced Ejection Fraction (HFrEF), Angina
CYP2D6 rs5030655 — Poor metabolizer.

AMIODARONE — Ventricular Arrhythmias, AF, S.V. Tachycardias
CYP3A4 rs35599367 — May increase toxicity due to long half-life, possible drug accumulation.

DILTIAZEM — AF, PSVT, Hypertension, Angina
CYP3A5 rs776746 — Increased drug exposure, increased plasma levels.

VERAPAMIL — AF, PSVT, Hypertension, Angina
CYP3A4 rs2242480 — Altered drug levels, monitor ECG and side effects.

LOSARTAN — Hypertension, HFrEF, CKD
CYP2C9 rs1057910 — Adjust dose if necessary. Longer half-life

DIGOXIN — AF, HFrEF, SVT
ABCB1 rs1045642 — Altered absorption, increased blood levels. Risk of Digoxin toxicity.

NIFEDIPINE — Hypertension, Angina, Preterm Labor
CYP3A5 rs776746 — Increased systemic exposure. Reduce dose or monitor hypotension.

FLECAINIDE — AF, PSVT, Arrhythmias
CYP2D6 rs28371725 rs5030655 — Lower clearance. Slower Metabolism, Increased arrhythmia risk. Avoid or reduce dose.

DABIGATRAN — Pradaxa: VTE, Afib Stroke
CES1 rs2244613 — Less activation, Less Efficacy, Increased Risk of Thrombosis.
ABCB1 rs10456425 — Higher Absorption, Higher Bleeding Risk

Supplements

- CHOLINE
- TMG (BETAINE)
- PHOSPHATIDYLCHOLINE
- COENZYME Q10
- VITAMIN B3 (NIACIN)
- VITAMIN B12
- VITAMIN B2 (RIBOFLAVIN)
- VITAMIN C
- VITAMIN D
- VITAMIN E
- VITAMIN K2
- ASHWAGANDHA
- GINGKO BILOBA
- ASTAXANTHIN
- BERBERINE
- PTEROSTILBENE
- QUERCETIN
- RESVERATROL
- FOLINIC ACID
- METHYLFOLATE
- NATTOKINASE
- RED YEAST RICE
- MAGNESIUM CITRATE
- MAGNESIUM GLYCINATE
- MAGNESIUM TAURATE
- MAGNESIUM THREONATE
- POTASSIUM CITRATE
- L-TAURINE
- L-PROLINE
- L-ARGININE
- L-CARNITINE
- L-LYSINE
- L-GLYCINE
- OMEGA-3

AORTIC ANEURYSMS

SOD3 rs2536517 rs1799895

ATRIAL SEPTAL DEFECT/AVSD

GATA4 rs115099192 rs56208331 rs115372595

GATA4: Walls between heart chambers may not close causing ASD/AVSD

ATRIAL FIBRILLATION

NKX2-5 rs186421649 rs104893901

NKX2-5: helps guide heart rhythm. Cause irregular heartbeats (AF). Also helps form heart's walls and electrical system. Variations may lead to holes and signal blockages.

LONG QT SYNDROME / BRUGADA SYNDROME

SCN5A rs1805124

SCN5A: Controls heartbeats. Heart takes too long to reset between beats (LQTS) Brugada: Disrupts electrical signal. Irregular heartbeats.

CONDUCTION AND SEPTAL DEFECTS

CAD: LPA rs3798220 rs10455872; TNS1

MITRAL VALVE PROLAPSE

DCHS1 rs201457119

DCHS1: Valve may become floppy and not close properly

FLNA: Shapes heart structure. Can cause soft of misshaped valves, leading to leakage or prolapse

VALVULAR DYSPLASIA

NOTCH1 rs864622056 rs864622059 rs864622066 rs869622057 rs864622060

NOTCH1: Valves may form abnormally, leading to narrowing or leakage.

FLNA rs267606819 rs137853318 rs28935470 rs186214592

ARRHYTHMIAS

KCNQ1 rs120074175 rs2237892

KCNQ1: Helps heart reset between beats. Variations: Reset is delayed, leading to abnormal heart rhythms.

LONG QT SYNDROME

KCNH2 rs121912516 rs121912506 rs121912507 rs121912508 rs121912511 rs104894021

KCNH2: Controls how heart resets after each beat. Variations make it take too long.

HYPERTROPHIC CARDIOMYOPATHY

MYH7 rs3218714 rs727503246 rs371898076 rs397516201 rs36211715 rs121913624

MYH7: Builds part of muscle. Variations make wall too thick, harder to pump blood and causing rhythm problems.

LEFT VENTRICULAR HYPERTROPHY

ADD1 rs4961

ADD1: Controls salt balance in body. Can raise BP, putting extra strain on the heart over time.

HEART FAILURE

AGT rs699

AGT: Regulate BP. Can lead to too much vessel tightening, raising BP and stressing heart.

MIOCARDIAL FIBROSIS

SOD3 rs2536517 rs1799895

SOD3: crucial antioxidant enzyme that protects the heart and vascular system from oxidative stress, especially in the extracellular matrix of the myocardium and vascular endothelium. Associated with Early-onset myocardial infarction, aortic aneurysms (especially abdominal), Myocardial Fibrosis, left ventricular hypertrophy.

MIOCARDIAL INFARCTION

LPA rs3798220 rs10455872

LPA: Affects fat and cholesterol in blood. Can cause buildup in arteries and valves, increasing the risk of heart disease and valve narrowing. Also Aortic Valve Calcification and Aortic Stenosis.

HEART FAILURE

NPPB rs198389

NPPB: This gene helps the heart get rid of extra salt and water. The heart keeps too much fluid, harder to pump —leads to heart failure.

PERIPHERAL ARTERY DISEASE

APOE rs429358 rs7412

APOE: Clear cholesterol from blood. Variations lead to high LDL and plaque buildup.

CORONARY ARTERY DISEASE

APOA5 rs662799

APOA5: Weaker Triglyceride-lowering response with Statins

APOA5: Elevated Triglycerides, associated with CAD, Ischemic Stroke, Myocardial Infarction.

CDKN2B-AS1 rs10757274

CDKN2B-AS1: Controls cell growth in blood vessels. Variants can lead to plaque buildup in arteries.

HEART FAILURE

CDKN2A/B rs10811661

CDKN2A/B: Control how cells grow and repair blood vessels. Can speed up artery damage and plaque buildup.

CAD

rs6511720 rs869320652 rs688 rs193922569

LDLR: Removes LDL from blood.

THROMBOSIS

F5 rs6025

F5: Helps with clotting; Factor V Leiden makes clots form too easily, raising risk of deep vein clots.

F2 rs1799963

F2: Helps blood to clot. Variants may make the blood clot too easily, increasing the risk of thrombosis.

VENOUS THROMBOEMBOLISM

ARTERY DISEASE

CETP rs7205804 rs5882 rs708272 rs1800775

CETP: Move cholesterol between HDL and LDL. Variants can lower HDL and raise LDL.

PAI-1 rs1799889

CORONARY STENOSIS

PLG rs121918094 rs4252120 rs783148

PLASMINOGEN — PLASMIN BREAKS DOWN CLOTS

SERPINC1 rs147266204 rs201381904 rs121909548

SERPINC1: Encodes Antithrombin (AT), that regulates bloods coagulation. Mutations can lead to hereditary antithrombin deficiency, one of the most severe inherited thrombophilias, with a risk of VTE estimated at up to 50% in affected individuals.

ATRIAL FIBRILLATION

PITX2 rs2200733

PITX2 – Guides heart structure and rhythm development. Variants can disrupt electric signals, leading to irregular heartbeats like Atrial Fibrillation.

ISCHEMIC STROKE

ZFHX3 rs2106261

ZFHX3: Helps regulate heart rhythm and electrical activity. Variants can increase risk of irregular heartbeats and AF. AF increases risk of clots, leading to Ischemic Stroke.

FREE CHOLESTEROL

HMGCR rs17238540 rs12916 rs17244841 rs3846663

HMG-CoA — RED YEAST RICE — L-CARNITINE

MEVALONATE PATHWAY

HMGCS2 rs137852634 rs142637731

rs3846662 rs3761740 rs5908

PCSK9 rs11591147 rs28362277 rs562556

LDLR rs6511720 rs869320652 rs688 rs193922569

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