

Patient Name: Patient, Demo
Sample ID: BIO-2026-0318
Collection Location: Mayo Clinic Arizona

Date of Birth: 06/15/1980
Ordering Provider: Dr. Victor Ortega
Date Collected: 03/10/2026

MRN: DEMO-001
Account Info: Mayo Clinic Arizona
Report Date: 03/18/2026

Overview

ASSESSED CONDITION	POLYGENIC RISK (PRS)	ODDS RATIO	PERCENTILE	DETAILS
Alzheimer's Disease	Average	0.3x	8th	Pg. 2
Atrial Fibrillation	Average	0.7x	32nd	Pg. 3
Breast Cancer	Average	1.1x	55th	Pg. 4
Chronic Kidney Disease	Average	1.6x	74th	Pg. 5
Colorectal Cancer	Average	1.1x	55th	Pg. 6
Coronary Artery Disease	Increased	2.4x	96th	Pg. 7
Heart Failure	Average	1.1x	58th	Pg. 8
Hypercholesterolemia	Average	0.5x	18th	Pg. 9
Hypertension	Average	1.8x	78th	Pg. 10
Prostate Cancer	Average	0.9x	47th	Pg. 11
Type 2 Diabetes	Increased	3.1x	97th	Pg. 12
Venous Thromboembolism	Average	0.8x	40th	Pg. 13
Appendix	Additional information about this test.			Pg. 14

Increased Polygenic Risk Score Identified

This patient's results show an increased polygenic risk score for **2** of the 12 conditions tested.

How to Use This Report

This report is designed to help you and your healthcare team create a personalized plan for screening and prevention. It is important to remember that these results are **not a diagnosis**, nor guarantee you will develop a specific condition.

The "Odds Ratio" score (e.g., 2.2x) compares the patient's genetics to people who have already been diagnosed with a condition. Values above 1.0x indicate a higher polygenic risk score (2.0x threshold for 'increased'), while values below 1.0x indicate reduced chance of disease. All findings should be considered with other factors (lifestyle, medication, clinical tests).

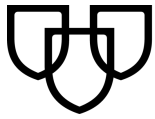
In some cases, your provider may even recommend screening earlier or more often than standard guidelines suggest to stay proactive. Detailed results for each condition can be found on the pages listed in the summary table.

Laboratory Director
Victor Ortega, M.D., Ph.D

Laboratory
Mayo Clinic MaRVIL Lab

Phone Number
(507) 284 - 9811

Email
prs@mayo.edu



Alzheimer's Disease: Average

Polygenic Risk Score (PRS)

Your Score

0.3x



Your PRS corresponds to an Odds Ratio of **0.3x** (8th percentile). People with a similar PRS have been observed to have approximately 0.3x the average odds, adjusted for ancestry. This is considered an **average polygenic risk score**.

APOE Genotyping

Screening of the two variant sites that define the APOE haplotype was performed as part of this panel.

rsID	Position	Genotype
rs429358	chr19:44,908,684	T/C (0/1)
rs7412	chr19:44,908,822	C/C

ε3/ε4 — Heterozygous APOE4 Carrier

One copy of the ε4-defining C allele at rs429358 (heterozygous); rs7412 reference homozygous rules out the ε2 allele. ε3/ε4 carriers carry an approximately 3–4× increased odds of late-onset Alzheimer's disease compared to ε3/ε3 (OR ~3.2 in populations of European ancestry; Farrer et al., 1997; Genin et al., 2011). Risk estimates vary by ancestry and sex. These are screening calls via NGS; confirmatory testing is recommended before clinical decision-making.

PGS ID: **PGS002753** | Independently verified, Mayo Clinic clinical cohort | 106 cases, 51,682 controls

Clinical Management & Considerations

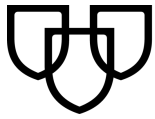
Based on the average polygenic risk score for Alzheimer's disease, standard clinical guidelines apply. Management should be guided by other factors.

Laboratory Director
Victor Ortega, M.D., Ph.D

Laboratory
Mayo Clinic MaRVIL Lab

Phone Number
(507) 284 - 9811

Email
prs@mayo.edu



Atrial Fibrillation: Average

Polygenic Risk Score (PRS)

Your Score

0.7x



Your PRS corresponds to an Odds Ratio of **0.7x** (32nd percentile). People with a similar PRS have been observed to have approximately 0.7x the average odds, adjusted for ancestry. This is considered an **average polygenic risk score**.

Common Risk Factors



This visual shows comparable risk from several common lifestyle factors.

PGS ID: **PGS003345** | Independently verified, Mayo Clinic clinical cohort | 8,445 cases, 50,178 controls

Clinical Management & Considerations

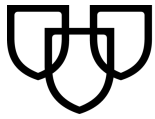
Based on the average polygenic risk score for atrial fibrillation, standard cardiovascular monitoring guidelines apply. Management should be guided by other factors.

Laboratory Director
Victor Ortega, M.D., Ph.D.

Laboratory
Mayo Clinic MaRVIL Lab

Phone Number
(507) 284 - 9811

Email
prs@mayo.edu



Breast Cancer: Average

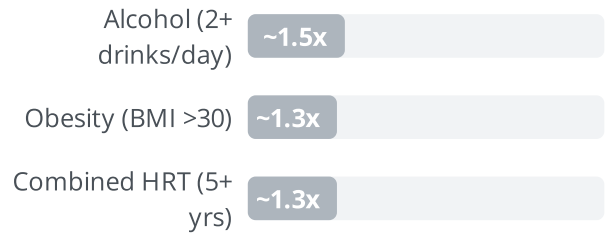
Polygenic Risk Score (PRS)

Your Score
1.1x



Your PRS corresponds to an Odds Ratio of **1.1x** (55th percentile). People with a similar PRS have been observed to have approximately 1.1x the average odds, adjusted for ancestry. This is considered an **average polygenic risk score**.

Common Risk Factors



This visual shows comparable risk from several common lifestyle factors.

PGS ID: **PGS004738** | Independently verified, Mayo Clinic clinical cohort | 2,034 cases, 31,662 controls

Clinical Management & Considerations

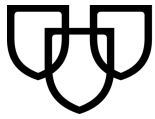
Based on the average polygenic risk score for breast cancer, standard age-appropriate screening guidelines apply. Management should be guided by other clinical and lifestyle factors.

Laboratory Director
Victor Ortega, M.D., Ph.D

Laboratory
Mayo Clinic MaRVIL Lab

Phone Number
(507) 284 - 9811

Email
prs@mayo.edu



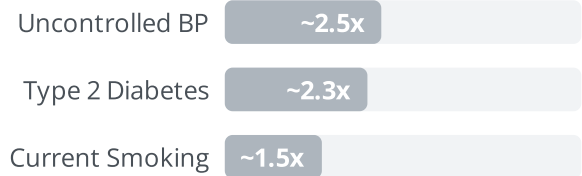
Chronic Kidney Disease: Average

Polygenic Risk Score (PRS)



Your PRS corresponds to an Odds Ratio of **1.6x** (74th percentile). People with a similar PRS have been observed to have approximately 1.6x the average odds, adjusted for ancestry. This is considered an **average polygenic risk score**.

Common Risk Factors



This visual shows comparable risk from several common lifestyle factors.

PGS ID: **PGS002823** | Independently verified, Mayo Clinic clinical cohort | 1,843 cases, 50,267 controls

Clinical Management & Considerations

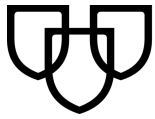
Based on the average polygenic risk score for chronic kidney disease, standard screening guidelines apply. Management should be guided by other factors.

Laboratory Director
Victor Ortega, M.D., Ph.D

Laboratory
Mayo Clinic MaRVIL Lab

Phone Number
(507) 284 - 9811

Email
prs@mayo.edu



Colorectal Cancer: Average

Polygenic Risk Score (PRS)

Your Score

1.1x



Your PRS corresponds to an Odds Ratio of **1.1x** (55th percentile). People with a similar PRS have been observed to have approximately 1.1x the average odds, adjusted for ancestry. This is considered an **average polygenic risk score**.

Common Risk Factors

Red Meat (Daily) ~1.6x

Heavy Alcohol ~1.5x

Obesity (BMI >30) ~1.3x

This visual shows comparable risk from several common lifestyle factors.

PGS ID: **PGS003852** | Independently verified, Mayo Clinic clinical cohort | 938 cases, 50,677 controls

Clinical Management & Considerations

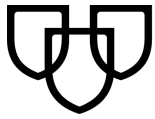
Based on the average polygenic risk score for colorectal cancer, standard age-appropriate screening guidelines apply. Management should be guided by other clinical and lifestyle factors.

Laboratory Director
Victor Ortega, M.D., Ph.D

Laboratory
Mayo Clinic MaRVIL Lab

Phone Number
(507) 284 - 9811

Email
prs@mayo.edu



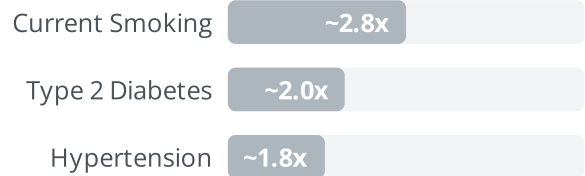
Coronary Artery Disease: Increased

Polygenic Risk Score (PRS)



Your PRS corresponds to an Odds Ratio of **2.4x** (96th percentile). People with a similar PRS have been observed to have approximately 2.4x the average odds, adjusted for ancestry. This is considered an **increased polygenic risk score**.

Common Risk Factors



This visual shows comparable risk from several common lifestyle factors.

PGS ID: **PGS004697** | Independently verified, Mayo Clinic clinical cohort | 7,222 cases, 50,179 controls

What This Means for You

Your genetic profile shows a pattern similar to people who have had coronary artery disease. **This doesn't mean you have CAD**; it just means you carry a combination of common DNA variations that, together, put you at a higher-than-average risk for developing coronary artery disease.

It's important to remember: this is not a diagnosis.

This score is independent of any current health conditions you may have, and not a diagnosis. What it does mean is that your unique biology deserves a closer look. You now have an advantage most people don't: an early indication that allows you to be proactive about your health.

Coronary artery disease develops gradually and is often silent for years before causing symptoms. Early awareness creates an opportunity to address modifiable factors — blood pressure, cholesterol, diet, exercise — well before problems develop, when preventive action is most effective.

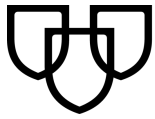
Your next step: share this report with your healthcare provider and ask how it should inform your care.

Laboratory Director
Victor Ortega, M.D., Ph.D

Laboratory
Mayo Clinic MaRVIL Lab

Phone Number
(507) 284 - 9811

Email
prs@mayo.edu



Heart Failure: Average

Polygenic Risk Score (PRS)

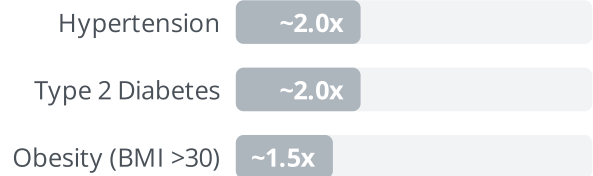
Your Score

1.1x



Your PRS corresponds to an Odds Ratio of **1.1x** (58th percentile). People with a similar PRS have been observed to have approximately 1.1x the average odds, adjusted for ancestry. This is considered an **average polygenic risk score**.

Common Risk Factors



This visual shows comparable risk from several common lifestyle factors.

PGS ID: **PGS003315** | Independently verified, Mayo Clinic clinical cohort | 3,828 cases, 50,144 controls

Clinical Management & Considerations

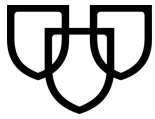
Based on the average polygenic risk score for heart failure, standard cardiovascular screening guidelines apply. Management should be guided by other clinical and lifestyle factors.

Laboratory Director
Victor Ortega, M.D., Ph.D

Laboratory
Mayo Clinic MaRVIL Lab

Phone Number
(507) 284 - 9811

Email
prs@mayo.edu



Hypercholesterolemia: Average

Polygenic Risk Score (PRS)

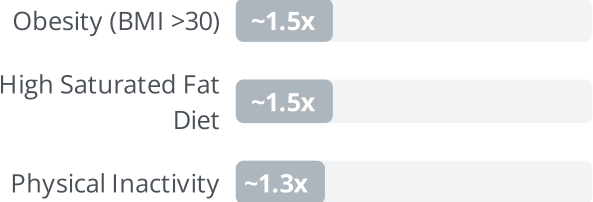
Your Score

0.5x



Your PRS corresponds to an Odds Ratio of **0.5x** (18th percentile). People with a similar PRS have been observed to have approximately 0.5x the average odds, adjusted for ancestry. This is considered an **average polygenic risk score**.

Common Risk Factors



This visual shows comparable risk from several common lifestyle factors.

PGS ID: **PGS004784** | Independently verified, Mayo Clinic clinical cohort | 340 cases, 52,442 controls

Clinical Management & Considerations

Based on the average polygenic risk score for hypercholesterolemia, standard lipid screening guidelines apply. Management should be guided by other clinical and lifestyle factors.

Laboratory Director
Victor Ortega, M.D., Ph.D

Laboratory
Mayo Clinic MaRVIL Lab

Phone Number
(507) 284 - 9811

Email
prs@mayo.edu



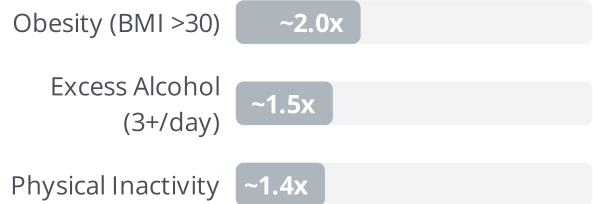
Hypertension: Average

Polygenic Risk Score (PRS)



Your PRS corresponds to an Odds Ratio of **1.8x** (78th percentile). People with a similar PRS have been observed to have approximately 1.8x the average odds, adjusted for ancestry. This is considered an **average polygenic risk score**.

Common Risk Factors



This visual shows comparable risk from several common lifestyle factors.

PGS ID: **PGS002490** | Independently verified, Mayo Clinic clinical cohort | 9,872 cases, 39,581 controls

Clinical Management & Considerations

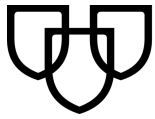
Based on the average polygenic risk score for hypertension, standard blood pressure screening guidelines apply. Management should be guided by other clinical and lifestyle factors.

Laboratory Director
Victor Ortega, M.D., Ph.D

Laboratory
Mayo Clinic MaRVIL Lab

Phone Number
(507) 284 - 9811

Email
prs@mayo.edu



Prostate Cancer: Average

Polygenic Risk Score (PRS)

Your Score

0.9x



Your PRS corresponds to an Odds Ratio of **0.9x** (47th percentile). People with a similar PRS have been observed to have approximately 0.9x the average odds, adjusted for ancestry. This is considered an **average polygenic risk score**.

Common Risk Factors

- High Dairy/Calcium ~1.5x
- Obesity (BMI >30) ~1.3x
- Sedentary Lifestyle ~1.2x

This visual shows comparable risk from several common lifestyle factors.

PGS ID: **PGS004872** | Independently verified, Mayo Clinic clinical cohort | 2,325 cases, 17,806 controls

Clinical Management & Considerations

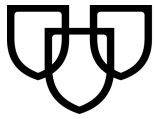
Based on the average polygenic risk score for prostate cancer, standard age-appropriate screening guidelines apply. Management should be guided by other clinical and lifestyle factors.

Laboratory Director
Victor Ortega, M.D., Ph.D

Laboratory
Mayo Clinic MaRVIL Lab

Phone Number
(507) 284 - 9811

Email
prs@mayo.edu



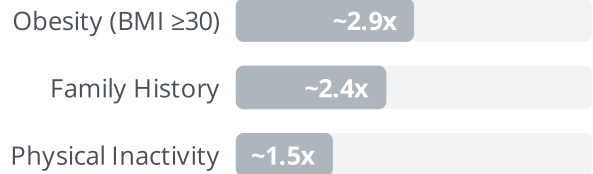
Type 2 Diabetes: Increased

Polygenic Risk Score (PRS)



Your PRS corresponds to an Odds Ratio of **3.1x** (97th percentile). People with a similar PRS have been observed to have approximately 3.1x the average odds, adjusted for ancestry. This is considered an **increased polygenic risk score**.

Common Risk Factors



This visual shows comparable risk from several common lifestyle factors.

PGS ID: **PGS004923** | Independently verified, Mayo Clinic clinical cohort | 4,304 cases, 34,113 controls

What This Means for You

Your genetic profile shows a pattern similar to people who have developed type 2 diabetes. **This doesn't mean you have diabetes;** it means you carry a combination of common DNA variations that, together, put you at a higher-than-average risk for developing insulin resistance and impaired blood sugar regulation over your lifetime. At the 97th percentile, this score places you among those with the highest observed genetic predisposition for this condition.

It's important to remember: this is not a diagnosis.

This score is independent of any current health conditions you may have. Type 2 diabetes is one of the most preventable chronic diseases. The landmark Diabetes Prevention Program found people at high risk who achieved modest weight loss and regular physical activity reduced their diabetes risk and outperformed medication.

Type 2 diabetes develops gradually, often passing through a reversible pre-diabetic stage first. Early awareness creates an opportunity to address modifiable factors — weight, diet, physical activity — when preventive action is most effective and disease progression most easily halted.

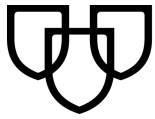
Your next step: share this report with your healthcare provider and ask how it should inform your care.

Laboratory Director
Victor Ortega, M.D., Ph.D

Laboratory
Mayo Clinic MaRVIL Lab

Phone Number
(507) 284 - 9811

Email
prs@mayo.edu



Venous Thromboembolism: Average

Polygenic Risk Score (PRS)

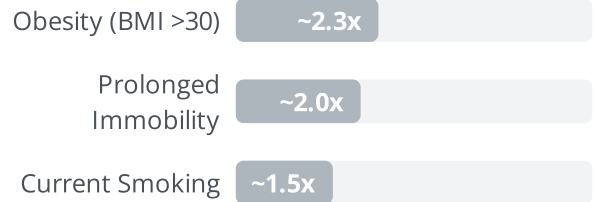
Your Score

0.8x



Your PRS corresponds to an Odds Ratio of **0.8x** (40th percentile). People with a similar PRS have been observed to have approximately 0.8x the average odds, adjusted for ancestry. This is considered an **average polygenic risk score**.

Common Risk Factors



This visual shows comparable risk from several common lifestyle factors.

PGS ID: **PGS001372** | Independently verified, Mayo Clinic clinical cohort | 2,470 cases, 50,193 controls

Clinical Management & Considerations

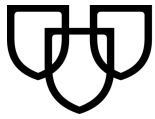
Based on the average polygenic risk score for venous thromboembolism, standard clinical monitoring applies. Management should be guided by other clinical and lifestyle factors.

Laboratory Director
Victor Ortega, M.D., Ph.D

Laboratory
Mayo Clinic MaRVIL Lab

Phone Number
(507) 284 - 9811

Email
prs@mayo.edu



Appendix

About This Test

This test provides a quantitative assessment of an individual's probability of sharing genomic variation with disease-affected populations. A Polygenic Risk Score (PRS) is calculated from a person's genomic data and is the sum of the number of common, low-impact risk alleles associated with the disease.

Disclaimer: This assessment constitutes a statistical probability based on current bioinformatic modeling and does not, in itself, represent a definitive clinical diagnosis or a guarantee of future disease manifestation.

Technical Details

Patient samples (blood or saliva) are processed by Broad Clinical Labs of the Broad Institute (27 Blue Sky Drive, Burlington, MA 01803; CLIA#22D2055652). The lab utilizes Next-Generation Sequencing (NGS) to perform either clinical Whole Genome Sequencing or a blended clinical Genome/Exome. This sequencing data receives a technical sign-out only after meeting all required quality control thresholds. Polygenic Risk Scores (PRS) are calculated by DxMapper by MapperHealth, LLC (9375 E Shea Blvd, Scottsdale, AZ 85260). DxMapper selects variants and associated effect sizes from the largest available Genome-Wide Association Studies (GWAS) and uses a suite of PRS methods to identify the best-performing score for each condition. All final results and this report are independently reviewed and approved by the Mayo Clinic Rapid Variant Interpretation Lab (MaRVIL) (13400 E. Shea Blvd, Scottsdale, AZ 85259) prior to release.

Laboratory Information

Performing Lab:

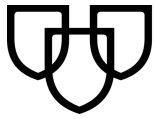
Broad Clinical Labs
27 Blue Sky Drive
Burlington, MA 01803
CLIA#22D2055652

Laboratory Director
Victor Ortega, M.D., Ph.D

Laboratory
Mayo Clinic MaRVIL Lab

Phone Number
(507) 284 - 9811

Email
prs@mayo.edu



Test Limitations

It is important to note that the results of the PRS analyses presented here are not diagnostic. The aim of these genomic, genetic, and bioinformatic analyses is to provide additional information to clinicians about the probability of overlapping genomic variation in confirmed patients with disease. Having a high polygenic risk score does not mean that the disease will develop, as there are numerous additional factors that contribute to and modify a diagnosis. Additionally, this test does not consider all known or unknown genetic and genomic variables that may additionally contribute to an individual's risk of developing disease.

Non-Diagnostic Nature of Results. The Polygenic Risk Score (PRS) analysis and all associated genomic, genetic, and bioinformatic data provided herein are intended strictly for investigational and informational purposes. The Recipient acknowledges that these findings do not constitute a clinical diagnosis, nor do they establish the presence or absence of any specific medical condition.

Clinical Intent and Scope. The objective of the provided analyses is to offer supplementary data to qualified healthcare professionals regarding the statistical probability of correlating genomic variations within confirmed patient cohorts. These results are to be utilized solely as a secondary clinical decision support tool and should not supersede professional medical judgment or established diagnostic protocols.

Limitation of Predictive Value. A high PRS percentile or "elevated risk" finding is not indicative of definitive disease manifestation. The Recipient expressly acknowledges that phenotypic expression is subject to multifactorial influence, including — but not limited to — environmental, lifestyle, and epigenetic modifiers which are not captured by this analysis.

Genomic Exclusions and Data Limitations. This test does not provide a comprehensive assessment of the human genome. It specifically excludes: known or unknown genetic variants not targeted by the specific assay; rare mutations, structural variations, or copy number variants (CNVs) not accounted for in the proprietary algorithm; and unidentified genomic variables that may contribute to or mitigate an individual's overall disease risk.

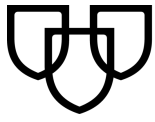
Assumption of Risk. Accordingly, the findings presented must be interpreted within the context of a full clinical evaluation. The provider of this analysis disclaims all liability for any actions taken or withheld based on the contents of this report in the absence of independent clinical validation.

Laboratory Director
Victor Ortega, M.D., Ph.D

Laboratory
Mayo Clinic MaRVIL Lab

Phone Number
(507) 284 - 9811

Email
prs@mayo.edu



References

1. Journal of Alzheimer's Disease. (n.d.). *APOE4 Genotype and the Risk of Developing Alzheimer's Disease*.
2. NICHE. (n.d.). *Study of seven Alzheimer's factors*.
3. Alzheimer's Disease International. (n.d.). *Risk factors for dementia*.
4. Mayo Clinic. (n.d.). *Alzheimer's genes: Are you at risk?*
5. Chen, S., & Parmigiani, G. (2007). Meta-analysis of BRCA1 and BRCA2 penetrance. *Journal of Clinical Oncology*, 25(11), 1329–1333.
6. Cancer Australia. (n.d.). *Lifestyle factors*.
7. MD Anderson Cancer Center. (n.d.). *Alcohol and breast cancer risk: What to know*.
8. Centers for Disease Control and Prevention. (2024, February 22). *What Are the Risk Factors for Breast Cancer?*
9. Zhang, Y., Wang, Y., Li, J., & Wang, L. (2024). Correlation between red meat and processed meat consumption and colorectal cancer incidence in Asia: a meta-analysis. *Frontiers in Medicine*, 11, 1555717.
10. Fedirko, V., et al. (2011). Alcohol drinking and colorectal cancer risk: an overall and dose–response meta-analysis. *Annals of Oncology*, 22(9), 1958–1972.
11. Prevent Cancer Foundation. (2024, March 5). *What's the link between obesity and colorectal cancer?*
12. American Cancer Society. (2024, June 21). *Colorectal Cancer Risk Factors*.
13. UF Health. (n.d.). *Understanding your prostate cancer risk*.
14. National Cancer Institute. (2024, May 10). *Genetics of Prostate Cancer (PDQ®)—Health Professional Version*.
15. Dickerman, B. A., et al. (2021). Obesity as a Risk Factor for Prostate Cancer Mortality. *Cancers*, 13(16), 4169.
16. Johns Hopkins Medicine. (n.d.). *Smoking and Cardiovascular Disease*.
17. Chobanian, A. V., et al. (2004). Blood Pressure and Cardiovascular Risk. *National Heart, Lung, and Blood Institute (US)*.
18. Centers for Disease Control and Prevention. (2024, April 29). *Diabetes and Your Heart*.
19. Noble, J. A., & Valdes, A. M. (2011). Genetics of the HLA region in the prediction of type 1 diabetes. *Current Diabetes Reports*, 11(6), 533–542.
20. Breakthrough T1D. (2025, July 15). *Who Is at Risk for Type 1 Diabetes?*
21. American Diabetes Association. (n.d.). *Genetics of Diabetes*.
22. Saydah, S. H., et al. (2005). Obesity, inactivity, and the prevalence of diabetes and diabetes-related cardiovascular comorbidities in the US, 2000–2002. *Diabetes Care*, 28(7), 1599–1604.
23. Lee, Y. H., Bae, S. C., & Song, G. G. (2012). Smoking and rheumatoid arthritis. *Journal of Rheumatic Diseases*, 19(1), 5–11.
24. IMD Institut für Medizinische Diagnostik. (n.d.). *HLA-DR4/DR1 "Shared Epitope" — Detection of Rheumatoid Arthritis*.
25. Arthritis Foundation. (2023, April 20). *Smoking Can Be Hazardous to Your Joints*.
26. Centers for Disease Control and Prevention. (2023). *LDL and HDL Cholesterol and Triglycerides*.
27. Khara, A. V., et al. (2016). Diagnostic Yield and Clinical Utility of Sequencing Familial Hypercholesterolemia Genes in Patients With Severe Hypercholesterolemia. *Journal of the American College of Cardiology*, 67(22), 2578–2589.
28. American Heart Association. (2020). *Cholesterol — Know Your Risk*.
29. Benjamin, E. J., et al. (2019). Risk Factors for Atrial Fibrillation. *Journal of the American Heart Association*, 8(1).
30. Lau, D. H., et al. (2017). Modifiable risk factors and atrial fibrillation. *Circulation*, 136(6), 583–596.
31. Shah, S. J., et al. (2020). Phenomapping for novel classification of heart failure. *European Journal of Heart Failure*, 22(8), 1399–1412.
32. Pandey, A., et al. (2015). Physical activity, fitness, and obesity in heart failure with preserved ejection fraction. *JACC: Heart Failure*, 3(2), 97–105.
33. Whelton, P. K., et al. (2018). Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults. *Journal of the American College of Cardiology*, 71(19), e127–e248.
34. Lifton, R. P., Gharavi, A. G., & Geller, D. S. (2001). Molecular mechanisms of human hypertension. *Cell*, 104(4), 545–556.
35. Cushman, M. (2007). Epidemiology and risk factors for venous thrombosis. *Seminars in Hematology*, 44(2), 62–69.
36. Heit, J. A. (2015). Epidemiology of venous thromboembolism. *Nature Reviews Cardiology*, 12(8), 464–474.
37. Coresh, J., et al. (2007). Prevalence of chronic kidney disease in the United States. *JAMA*, 298(17), 2038–2047.
38. Levey, A. S., & Coresh, J. (2012). Chronic kidney disease. *The Lancet*, 379(9811), 165–180.

Laboratory Director
Victor Ortega, M.D., Ph.D

Laboratory
Mayo Clinic MaRVIL Lab

Phone Number
(507) 284 - 9811

Email
prs@mayo.edu