

DNA TO Z



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DNA TESTING SERVICE -
CANADA

GENETIC TESTING

Lab analysis for more than
700,000 SNPs

GENETIC ANALYSIS

Interpretation of DNA results
using AI statistical approach

CLIENT NAME

MR. XXX YYY

Age: 50's

Gender: Male

MYGENES PREMIUM REPORT

August 1 2018

I- SNP TEST SUMMARY (SINGLE-NUCLEOTIDE POLYMORPHISM)

SNP REPORT

Number of SNPs tested: 720,929

Number of SNPs Found: 10,812

Number of matching SNPs: 3889

Disease SNPs: 1661

Blood SNPs: 30

Drugs SNPs: 269

Good SNPs: 14

Tests SNPs: 1035

Traits SNPs: 870

Ethnicity Markers: 40

2- PHENOTYPE REPORT

High Risk Disease Carrier



- *Cutaneous nevi*
- *Amyloid A serum levels*
- *Early onset atrial fibrillation*
- *prostate cancer PCA3 expression level*
- *increased risk for lung cancer*
- *IgM levels*
- *higher risk for endometrial cancer*
- *Sagittal craniosynostosis*
- *IgE levels in asthmatics (D.f. specific)*
- *Ankle-brachial index*
- *Retinol levels*
- *Multiple cancers (lung cancer, gastric cancer, and squamous cell carcinoma)*
- *Life threatening arrhythmia*
- *Noonan-like syndrome with loose anagen hair*
- *Uveal melanoma*
- *E-selectin levels*
- *2.76X RISK of Age Related Macular Degeneration*
- *Cardiovascular heart disease in diabetics*
- *higher risk for MI and lung cancer, and COPD in smokers*

- *Increased risk of hearing loss*
- *Increased risk of familial colorectal cancer and Asperger's syndrome*
- *Joint damage progression in ACPA-negative rheumatoid arthritis*
 - *Vascular dementia*
 - *later onset of bipolar disorder (BP)*
- *2.5x increased risk of Alzheimer's and decreased age at onset*
 - *common, but faster HIV progression*
 - *reduced MAOA activity-borderline personality disorder*
 - *in Alzheimer patients, increased risk of delusions*
 - *Significantly increased risk of developing lung cancer*
 - *3.2x risk for Type-2 Diabetes*
- *Progression free survival in metastatic colorectal cancer (chemotherapy interaction)*
 - *In Type 2 diabetics, possibly earlier onset of disease*
 - *higher BP if rs4961(T) carrier*
 - *increased risk in men for biliary conditions*
 - *Pulse pressure in young-onset hypertension*
 - *Sclerosing cholangitis and ulcerative colitis (combined)*
 - *Vaspin levels*
- *higher risk for chordoma reported in one study; no association seen in another study*
 - *Diabetic nephropathy in type-I diabetes*
 - *Coronary spasm*
- *possibly Gaucher's disease, but more likely a mis-oriented interpretation*
 - *Increased odds (2 - 4 fold?) of V617F-associated MPNs*
 - *Ataxias, including spinocerebellar ataxia*
 - *Neuranatomic and neurocognitive phenotypes*
 - *Glioma susceptibility; meningioma (indicated)*
 - *Alzheimer's disease, early-onset, as reported*
 - *Dravet syndrome and severe epileptic seizure syndrome(s) possible*
 - *Neurofibromatosis, type I*
 - *increased risk of insulin resistance*
 - *MAPT H1/H1 diplotype link to parkinson Disease*
 - *DBP deficiency*
 - *Glomerulosclerosis*
- *carrier of one CYP1A2_1545T>C allele, Caffeine Metabolizer*

- *Achondroplasia/dwarfism?*
- *Higher major depressive disorder risk ?*
- *~8 fold increase in relative risk for breast cancer*
- *increased risk for auto-immune diseases*
- *Increased risk of Multiple Sclerosis.*
- *Increased risk for lung cancer and emphysema*
- *Bohring-Opitz syndrome*
- *Significantly higher risk for colorectal and endometrial cancer*
- *anxiety related behaviors*
- *BRCA1 variant considered to be pathogenic for breast cancer*
- *possible congenital heart defect mutation*
- *associated with Alzheimer's disease (either early- or late-onset)*
- *Significantly increased risk for early-onset Alzheimer's disease*
- *Picks disease of the brain*
- *2x increased Alzheimer's disease risk in ApoE4 carriers*
- *2.3x risk of rheumatoid arthritis*
- *Higher risk of coeliac and/or inflammatory bowel disease*
- *Hippocampal sclerosis of aging*
- *higher Alzheimer's risk if ApoE4 also present*
- *Carrier of one CYP1A2*IF allele; Slow Caffeine Metabolizer.*
- *Increased risk for multiple auto-immune diseases*
- *4.6x increased risk of Ankylosing Spondylitis.*
- *Ratio of the peak velocity of the mitral E-Wave divided by the peak velocity of the mitral A-wave.*
- *common, but 2.2x higher risk for heart disease*
- *~2x increased risk for Parkinson's disease, and, essential tremor*
- *2.5x increased risk of cleft lip*
- *Schizophrenia (cytomegalovirus infection interaction)*
- *2.15x more likely positive lymph node in Breast Cancer*
- *Acute lymphoblastic leukemia (adolescents and young adults)*
- *Insulin disposition index*
- *Coronary restenosis*
- *Thyroid peroxidase autoantibody levels in type-I diabetes*
- *Substance dependence*
- *HIV-1 progression*



- *Soluble E-selectin levels*
 - *Airway hyperresponsiveness*
 - *Small-cell lung cancer (survival)*
 - *Leishmaniasis (visceral)*
 - *HPV seropositivity*
 - *early-onset Alzheimer's disease*
 - *BRCA2 mutation considered pathogenic for breast cancer*
 - *Proinsulin levels*
 - *Testicular cancer*
 - *Gerstmann–Straussler–Scheinker syndrome*
 - *Progressive familial heart block type IB (Brugada syndrome)*
 - *Atrioventricular conduction*_
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Blood Genotype



Duffy Fy(a-b+) phenotype likely (unless Duffy null mutation is present)

Jk(a+/b-) Kidd blood group, barring other variants

Area under the curve of insulin levels

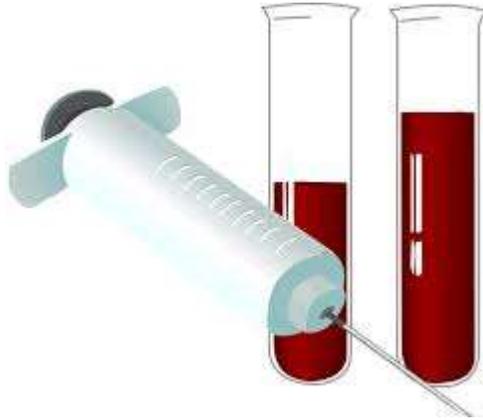


Drugs Report



- *Response to montelukast in asthma (change in FEV1)*
- *Response to irinotecan in non-small-cell lung cancer*
- *1.7x increased risk for NSAID hypersensitivity*
- *Normal (better) response to amphetamine*
- *Cerivastatin-induced rhabdomyolysis*
- *Among asthmatics, 1.5x more likely to show less response to inhaled glucocorticoids*
- *possible weight gain if taking olanzapine*
- *1.12x risk on diuretic; if hypertensive, better outcome when treated with calcium channel blocker than with diuretic*
- *3.6x increased risk of sexual dysfunction when taking SSRI Antidepressants*
- *carrier of one CYP2E1*
- *coumadin resistance*
- *1.7x increased risk that pediatric inhaler use may make asthma worse*
- *average response to metformin in type 2 diabetics*
- *no positive effect of AChE inhibitors for Alzheimer's patients*
- *Pharmacokinetics of antidepressant drugs in severe mental disorder (concentration dose ratio)*
- *4.5x increased myopathy risk for statin users*
- *Response to metformin in type-2 diabetes (glycemic)*
- *Psychosis (methamphetamine induced)*
- *Myocardial infarction in hypertension (calcium channel blocker interaction)*
- *Response to diuretic therapy in hypertension*
- *If efavirenz is ever prescribed for you, lower doses may be advisable*
- *Methotrexate clearance (acute lymphoblastic leukemia)*

Tests Report



- *DNA methylation (parent-of-origin)*
 - *Circulating myeloperoxidase levels (plasma)*
 - *Sex Hormone-Binding Globulin levels are 0.2 standard deviations higher*
 - *LDL (oxidized)*
 - *Diastolic blood pressure (long-term average)*
 - *normal HDL-C levels*
 - *hyperuracemia*
 - *circulating leptin levels adjusted for BMI*
 - *Carotenoid and tocopherol levels*
 - *Matrix metalloproteinase-8 levels*
 - *Serum IgA levels*
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Traits Report



Gambling

Alcohol dependence or chronic alcoholic pancreatitis or alcohol-related liver cirrhosis

Hippocampal volume

Alcoholism (12-month weekly alcohol consumption)

increased risk of baldness

Increased risk of developing restless legs syndrome

Pathological gambling

Bigger Breast size

Self-employment

* associated with the variance in harm avoidance, fear of uncertainty and reward dependence*

0.75x lower risk of Male Pattern Baldness.

better odds of living to 100

darker eye, hair, and skin color,

homo sapiens gene (not Neanderthal)

increased creativity?

increased longevity and/or executive function

increased risk of obesity

increased intelligence

less able to detect β -ionone (floral) fragrance

lowest adiponectin levels, presumably less lean

Mix of muscle types. Likely sprinter.



- *More intense perception of quinine*
 - *Slightly higher fat mass*
 - *Slightly lower oxytocin & empathy? Possibly higher 'callous-unemotional' trait frequency in children.*
 - * skin pigmentation in a South Asian population*
 - *2x increased risk of Male Pattern Baldness.*
 - *2x more likely to have blond hair*
 - *2x risk of severe alcohol withdrawal. Possible increased odds of ADHD.*
 - *adult waist 0.9cm larger on average*
 - *adults likely to be 0.22 BMI (Body mass index / Obesity) units higher*
 - *Anterior chamber depth*
 - *Associated with (slightly) increased coffee consumption*
 - *associated with the absence of freckles*
 - *Average height*
 - *bigger breast size (normal in female European)*
 - *Executive inhibition (Stroop WIT and CIT) in attention deficit hyperactivity disorder*
 - *greater odds of living to 95*
 - *greatly increased memory performance*
 - *Hip bone size*
 - *Sexual dimorphism in anthropometric traits*
 - *Trans-epidermal water loss*
 - *Alcoholism (alcohol use disorder factor score)*
-



Good Genes Report



very common, but it seems better to have the minor allele which is protective against several diseases

0.91x decreased risk for type-2 diabetes

Higher Carotenoid and tocopherol levels

Lower lung cancer and increased breast cancer risk

possibly lower risk of Crohn's Disease (OR=0.30)

1.5x less risk for physical impairment with age.

Longer lifespan, 0.28x lower risk of dementia, 0.31x lower risk of Alzheimer's

Glossary



Allele — The actual nucleotide sequence of a gene on a chromosome. Changes in sequence from one allele to another arise as a result of mutation in the germline and can be transmitted to the next generation.

Amino acids — The building blocks of proteins. In vertebrates, there are 20 amino acids. In a gene, each amino acid is encoded by a sequence of 3 nucleotides (triplet) that instructs the cell to insert that amino acid in a specific position as the protein is assembled. No triplet encodes for more than one amino acid but different triplets encode for the same amino acid.

Autosomal — A gene (or its alleles) on one of the 22 autosomes. See Chromosome

Carrier — (1) A person of either gender who has inherited a disease-causing autosomal allele from one parent and a normal allele from the other parent. Inheritants of disease-causing alleles from both parents results in an autosomal recessive disease. (2) A female who possesses an allele on one of her X chromosomes (X-linked) which results in disease in males. In most cases, carriers suffer no ill effects from possession of the allele. "Heterozygote" for autosomal recessive or X-linked disorders is a synonym for "carrier." (3) A person who has inherited a single allele which results in an autosomal dominant disease.

Chromosome — The rod-like nucleoproteins along which the genes are arrayed in the nucleus. In human somatic cells, the chromosomes consist of 22 pairs of autosomes and, in females, two X chromosomes and, in males an X chromosome and a Y chromosome. Normally, therefore, each cell contains 46 chromosomes.

DNA — Deoxyribonucleic acid. A linear sequence of deoxyribonucleotides (nucleotides for short). See Nucleotide.

Dominant — A condition that is manifest in heterozygotes.



Enzyme — A protein with a catalytic function (i.e., one that accelerates a chemical reaction reaching equilibrium).

Gene, gene locus — The position on a chromosome at which alleles reside. Alleles are transcribed into mRNA.

Gene product — The mRNA or protein encoded by a specific gene, or more properly, alleles of the gene.

Genetic heterogeneity — (1) The presence of different alleles at a gene locus. See Allelic diversity. (2) The ability of more than one allele to cause the same trait, for instance, a disease. Alleles at different gene loci (locus heterogeneity), as well as those at the same locus (allelic diversity), may each be expressed as the same trait.

Genetic predisposition or susceptibility — A genotype that increases the risk of disease but does not make it certain. The susceptibility-conferring allele will be inherited in Mendelian fashion but the disease itself will not. The single locus genotype is insufficient to result in disease. Impaired expression of alleles at other gene loci and/or environmental factors are needed before disease appears.

Genotype - is the part of the genetic makeup of a cell, and therefore of an organism or individual, which determines one of its characteristics (phenotype)

Genome — The entire array of genes of an organism or species.

Phenotype - is the composite of an organism's observable characteristics or traits, such as its morphology, development, biochemical or physiological properties, behavior, and products of behavior

Standard Report

Risk SNPs	Risk Allele1	Condition	Gene	Chr	Position	Alleles	Ref
rs12044852	C	>1.24x risk for multiple sclerosis	CD58, LOC105378925	1	117087779	CC	https://en.wikipedia.org/wiki/Multiple_sclerosis
rs25062	A	1.12x risk on diuretic; if hypertensive, better outcome when treated with calcium	NPPA, NPPA-AS1	1	11906068	AA	https://www.ncbi.nlm.nih.gov/pubmed/1925062
rs25746059	A	Slightly higher fat mass	TNFRSF18	1	12262792	AA	https://en.wikipedia.org/wiki/Obesity
rs1046934	A	Height	TSEN15	1	184023519	AA	https://en.wikipedia.org/wiki/Human_height
rs10754644	G	Economic and political preferences (feminism/equality)	intergenic	1	238724741	GG	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3361436/
rs10789340	G	Depressive symptoms	NR	1	72840273	GG	https://www.psychiatry.org/patients-families/depression/what-is-depression
rs10863936	A	Height	DTL	1	212237798	AA	https://en.wikipedia.org/wiki/Human_height
rs10874312	A	Glomerular filtration rate (creatinine)	LFH2	1	82844571	AA	https://medlineplus.gov/ency/article/007305.htm
rs10919470	G	Intraocular pressure	PBRX1, MROH9	1	170762680	GG	https://en.wikipedia.org/wiki/Intraocular_pressure
rs1092162	C	End-stage coagulation	CFHR4	1	19707076	CC	https://en.wikipedia.org/wiki/Hemostasis
rs11208722	A	C-reactive protein levels or triglyceride levels (pleiotropy)	LEPR	1	66171001	AA	https://www.mayoclinic.org/diseases-conditions/high-blood-cholesterol/in-depth/trig
rs11247594	G	White matter hyperintensities in ischemic stroke	ARID1A	1	27067417	GG	https://en.wikipedia.org/wiki/Stroke
rs11249243	C	Male-pattern baldness	SYF1, RUNX3	1	23947377	CC	https://en.wikipedia.org/wiki/Hair_loss
rs1144333	G	Attention function in attention deficit hyperactive disorder	MSH4	1	76275100	GG	https://en.wikipedia.org/wiki/Attention_deficit_hyperactivity_disorder
rs1144566	C	Ease of getting up in the morning	NR	1	182569626	CC	https://en.wikipedia.org/wiki/Chronotype
rs1144593	A	Intelligence (multi-trait analysis)	ATXN12	1	110030945	AA	https://en.wikipedia.org/wiki/Intelligence
rs11577628	A	Word reading	NOS1AP	1	162319524	AA	https://www.ncbi.nlm.nih.gov/pubmed/23738548?dopt=Abstract
rs11583200	T	BMI (adjusted for smoking behaviour)	ELAVL4	1	50559620	TT	https://www.cancer.org/cancer/cancer-causes/tobacco-and-cancer/health-risks-of-sm
rs11587438	T	White blood cell types	TAS1R1	1	6631431	TT	https://en.wikipedia.org/wiki/White_blood_cell
rs11587682	C	Autism spectrum disorder, attention deficit-hyperactivity disorder, bipolar disorder	NR	1	150324284	CC	https://en.wikipedia.org/wiki/Schizophrenia
rs1172149	G	Platelet distribution width	TMCC2	1	205224758	GG	https://abtestonline.org/tests/platelet-count
rs1186589	C	Schizophrenia	MIR137	1	98595411	CC	https://en.wikipedia.org/wiki/Schizophrenia
rs12027542	A	Type-2 diabetes	PCNXL2	1	233340154	AA	https://en.wikipedia.org/wiki/Diabetes_mellitus
rs12034393	G	Erythrocyte sedimentation rate	CR1	1	207803955	GG	https://www.mayoclinic.org/tests-procedures/erd-rate/about/pac-20384797
rs12045438	T	Subjective well-being	NR	1	8439904	TT	https://en.wikipedia.org/wiki/Subjective_well-being
rs12072199	T	Intelligence (multi-trait analysis)	FAMA3B	1	20877812	TT	https://en.wikipedia.org/wiki/Intelligence
rs12096438	T	Mean platelet volume	LDLRAP1	1	25889422	TT	https://en.wikipedia.org/wiki/Mean_platelet_volume
rs12136068	A	Glomerular filtration rate (creatinine)	SYF1	1	110041170	AA	https://medlineplus.gov/ency/article/007305.htm
rs1233249	A	Preschool internalizing problems	NR	1	226082425	AA	https://www.ncbi.nlm.nih.gov/pubmed/24839883
rs12404679	C	Alcohol consumption (maxi-drinks)	intergenic	1	43458428	CC	https://en.wikipedia.org/wiki/Alcoholism
rs12722887	A	Obesity-related traits	PLAZG2D	1	20453220	AA	https://en.wikipedia.org/wiki/Obesity
rs12726220	A	Subjective well-being	NR	1	154171530	AA	https://en.wikipedia.org/wiki/Subjective_well-being
rs12733700	G	Interleukin-17 levels	NR	1	3489867	GG	https://en.wikipedia.org/wiki/Interleukin
rs12744534	A	Hip circumference adjusted for BMI	PRRX1	1	170658335	AA	https://en.wikipedia.org/wiki/Hip_bone
rs12748152	C	HDL cholesterol	PIG, NROB2	1	27138393	CC	https://en.wikipedia.org/wiki/High-density_lipoprotein
rs12752888	C	Rate of cognitive decline in mild cognitive impairment (time interaction)	ACOT11	1	54992939	CC	
rs12757404	A	Lipid traits	PTPN14	1	214629616	AA	http://journals.plos.org/plosgenetics/article?id=10.1371/journal.pgen.1002138
rs1317681	G	Peripheral arterial disease (traffic-related air pollution interaction)	NR	1	218775202	GG	https://www.mayoclinic.org/diseases-conditions/peripheral-artery-disease/symptoms
rs1321172	C	1.08x risk for multiple sclerosis	PDE4B	1	66707133	CC	https://en.wikipedia.org/wiki/Multiple_sclerosis
rs1336900	A	Blood protein levels	RMAD1, GOLPH3L, RNJUB	1	150679033	AA	https://en.wikipedia.org/wiki/Blood_protein
rs14057	A	Systolic blood pressure	RNF207	1	6683240	AA	http://www.bloodpressureuk.org/BloodPressureandyou/TheBasics/BloodPressurecheck
rs1414660	C	Bone mineral density (Ward's triangle area)	FMN2	1	240586695	CC	https://en.wikipedia.org/wiki/Bone_density
rs1439523	C	IgG glycosylation	NR	1	242531654	CC	https://www.ncbi.nlm.nih.gov/pubmed/19212958
rs1476670	C	Eotaxin levels	NR	1	44908195	CC	https://en.wikipedia.org/wiki/CCL11
rs1568419	C	Mean corpuscular volume	PROM1E	1	29966602	CC	https://en.wikipedia.org/wiki/Mean_corpuscular_hemoglobin
rs16843742	T	Vitiligo	PTPRC	1	198672299	TT	https://www.medicinenet.com/vitiligo/article.htm
rs17024393	T	BMI (adjusted for smoking behaviour)	GNAT2	1	110154688	TT	https://www.cancer.org/cancer/cancer-causes/tobacco-and-cancer/health-risks-of-sm