# Genomics Report for PGP-UK6/uk0C72FF 

## 1 Summary

This is the genome report for participant PGP-UK6/uk0C72FF. It was produced using collaborative research tools, including SNPedia and GetEvidence. This summary shows an overview of all the variants which were found in the genome for this individual. They have been compared with a reference genome.

This report was generated automatically and is not clinically approved. It is provided for personal and research purposes only.

This document contains hyperlinks, shown in grey, that will take you to external websites where you can find more detailed explanations. Some of the technical terms are also explained in more detail in the Ensembl Glossary. We would welcome your feedback about this report, for example, if you would like more information about anything or if any of the links have become inactive. You can contact us on: pgp-uk@ucl.ac.uk.

This summary shows an overview of all the variants which were found in the genome for this individual. The "variants remaining after filtering" refers to any differences in the DNA identified when compared to the reference genome. Of these, the majority will have already been found in some other sequenced individual and put on a database (existing variants) while others have not yet been annotated (novel variants).
"Overlapped genes" refers to the number of times where a variant was found in a region of the genome containing a gene. "Exon" refers to the part of the gene which goes on to form a protein, and variants in this part of the gene are more likely to cause changes in the shape of the protein. Upstream, downstream, intronic and intergenic variants are more likely to alter the regulation of that gene but will not change the protein itself.

A transcript for a protein-coding gene can include the exons, introns and other gene features that are transcribed and important for gene function but might not be translated into the final protein. Not all transcripts are for protein-coding genes, with many containing non-coding RNAs that can be overlapping other genes, in introns or in intergenic regions. The diagram in Figure 1 is a simplification of the usual gene structure.


Figure 1: Diagram of gene structure indicating locations of potential variants

| Feature | Count |
| :--- | :--- |
| Lines of input read | 4138711 |
| Variants remaining after filtering | 4111625 |
| Novel / existing variants | $108299(2.6 \%) / 4003326(97.4 \%)$ |
| Overlapped genes | 54592 |
| Overlapped transcripts | 64300 |
| Overlapped regulatory features | 211668 |

Table 1: Variant calling summary

There are several different types of genomic variants. The most common are single nucleotide variants (SNV) that correspond to the change of a single nucleotide in the DNA. Other variant types include insertions, where the DNA in the individual is longer than the reference sequence due to the insertion of one or more nucleotides; and deletions, where a few nucleotides are missing compared to the reference sequence.

Some of these changes will have no effect on the protein, while some changes may alter the protein function to varying degrees. The PolyPhen analysis software attempts to quantify the effect each mutation will have on the protein function. This ranges from "benign" where no change to the protein function is expected, to "probably damaging" where it is predicted that the mutation will affect protein function. It is nevertheless important to note that what is "damaging" for the protein is not necessarily damaging for the individual.


Figure 2: PolyPhen Summary


Figure 3: Variant Class


Intergenic variant
Figure 4: Consequence type

## 2 Ancestry

This plot shows the distribution of the genomes of different populations. Data from several studies which used whole genome sequencing was used to see the relationships between the genomes of the populations. It shows how closely related certain populations are genetically: Groups which cluster closely are more genetically similar than groups which are further apart. The black star symbol shows where this PGP-UK participant sits in relation to other populations, indicating their ancestry and their most closely related populations according to genetic sequence.

## Ancestry PGP-UK6



Figure 5: Ancestry Principal Component Analysis

## 3 Traits (based on SNPedia information)

Existing research has associated many variants with phenotypic traits, some of which can be perceived as beneficial while others appear to have a harmful effect. Some traits are complex and can be affected by several variants. It is likely that some of these would confer a higher risk while others a lower risk of trait manifestation. These can not be combined linearly to produce an actual risk of disease.

It is important to note that in most cases genomic data is probabilistic, not deterministic- i.e. having a genetic predisposition for a disease is not a diagnosis; rather, it shows an increased likelihood of developing that disease. Also, one person can have both potentially beneficial and harmful variants in the same gene, or associated with the same disease.

Some variants can also affect certain populations more, or will only affect a particular gender. For example, a variant for higher risk of endometriosis in the sequence of a male will not directly affect that person, but can be passed on to descendants.

While many traits are the result of a unique variant, many are the combination of several variants throughout the genome. In SNPedia, these are called genosets. These can integrate some of the information already present in the single variant tables, or be the combination of variants that have no phenotypic effect on their own, but contribute to a trait when together.

The variants in the following tables are sorted by magnitude. This is an subjective measure defined in SNPedia to highlight the perceived importance of the genotype described. At the moment this scale goes from 0 to 10 . You can read more about it by visiting their explanatory webpage.

As our knowledge grows, the interpretation of the effect of certain variants might change. Clicking on the links in the genome report tables will take you to websites containing more information about each variant.

- Possibly Beneficial Traits

| Mag. | Identifier | Genotype | Summary | ExAC | GetEvidence | ClinVar |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2.1 | rs2511989 | (A;G) | 0.63x decreased age-related macular degeneratio... |  | Link |  |
| 2.1 | rs3775291 | ( $\mathrm{A} ; \mathrm{G}$ ) | 0.71 x decreased risk for dry age related macula... | Link | Link | Link |
| 2.1 | rs6505162 | (A;A) | 0.43 x decreased risk for esophageal cancer | Link |  |  |
| 2.1 | rs738409 | (G;G) | Most common genotype; slightly less damage from... | Link | Link |  |
| 2 | rs10088218 | ( $\mathrm{A} ; \mathrm{A}$ ) | 0.5x decreased risk for ovarian cancer |  |  |  |
| 2 | rs10468017 | (T;T) | Associated with higher HDL cholesterol |  | Link |  |
| 2 | rs10503669 | ( $\mathrm{A} ; \mathrm{C}$ ) | Associated with higher HDL cholesterol |  | Link |  |
| 2 | rs11045585 | ( $\mathrm{A} ; \mathrm{A}$ ) | $24 \%$ chance (lower than average) of docetaxel-in... |  | Link |  |
| 2 | rs12678919 | (A;G) | Associated with higher HDL cholesterol |  | Link |  |
| 2 | rs12979860 | (C;C) | ~ $80 \%$ of such hepatitis C patients respond to tr... |  | Link |  |
| 2 | rs1544410 | (G;G) | Decreased risk of low bone mineral density diso... |  | Link |  |
| 2 | rs17070145 | (C;T) | Increased memory performance |  |  | Link |
| 2 | rs1799884 | (G;G) | Mothers have typical Birth-Weight babies. Sligh... |  |  |  |
| 2 | rs1864163 | (G;G) | Associated with higher HDL cholesterol |  | Link |  |
| 2 | rs2542052 | (C;C) | Better odds of living to 100 |  |  |  |
| 2 | rs3738579 | ( $\mathrm{C} ; \mathrm{T}$ ) | 0.5x decreased risk for cervical cancer: HNSCC:... |  |  |  |
| 2 | rs3764261 | (G;T) | Associated with higher HDL cholesterol |  | Link | Link |
| 2 | rs3782179 | (C;T) | 3x lower odds of testicular cancer risk for men... |  |  |  |
| 2 | rs3819331 | (T;T) | Lower risk of autism | Link |  |  |
| 2 | rs3914132 | ( $\mathrm{C} ; \mathrm{T}$ ) | Lower otosclerosis risk |  | Link |  |
| 2 | rs4143094 | (G;G) | No increased risk of colorectal cancer correlat... |  |  |  |
| 2 | rs4149268 | (A;G) | Associated with higher HDL cholesterol |  | Link |  |
| 2 | rs505922 | (T;T) | Blood type O |  | Link |  |
| 2 | rs763110 | (C;T) | ~0.80x reduced cancer risk |  |  | Link |
| 2 | rs7776725 | (T;T) | Stronger bones |  | Link |  |
| 2 | rs801114 | ( $\mathrm{T} ; \mathrm{T}$ ) | 0.78x decreased Basal Cell Carcinoma risk. |  | Link |  |
| 2 | rs9642880 | (G;G) | Slightly lower risk of Bladder Cancer. |  | Link |  |
| 1.5 | rs1026732 | (A;G) | 0.70x risk for restless legs |  | Link |  |


| Mag. | Identifier | Genotype | Summary | ExAC | GetEvidence | ClinVar |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1.5 | rs1063192 | (C;C) | 0.71x reduced risk of myocardial infarction |  |  |  |
| 1.5 | rs11635424 | (A;G) | 0.70x risk for restless legs |  | Link |  |
| 1.5 | rs1165205 | ( $\mathrm{A} ; \mathrm{A}$ ) | 0.85x decreased gout risk |  | Link |  |
| 1.5 | rs12593813 | (A;G) | 0.71x risk for restless legs |  | Link |  |
| 1.5 | rs16991615 | (A;G) | Slight increase (11 months) in avg age at menop... | Link | Link |  |
| 1.5 | rs3784709 | (C;T) | 0.71x risk of developing restless legs syndrome... |  | Link |  |
| 1.5 | rs3790844 | (C;T) | Slightly reduced risk (0.77x) for pancreatic ca... |  |  |  |
| 1.5 | rs3851179 | (A;G) | 0.85x decreased risk for Alzheimer's disease |  | Link |  |
| 1.5 | rs4149274 | (C;T) | Associated with higher HDL (good) cholesterol |  |  |  |
| 1.5 | rs4489954 | (G;T) | 0.69x risk risk of developing restless legs syn... |  | Link |  |
| 1.5 | rs4939883 | (C;T) | Associated with higher HDL cholesterol |  | Link |  |
| 1.5 | rs5968255 | (C;C) | Slower AIDS progression (8 years) |  |  |  |
| 1.5 | rs610932 | (A;A) | A allele associated with reduced risk of Alzhei... |  |  |  |
| 1.5 | rs729302 | (A;C) | 0.89x decreased risk of developing rheumatoid a... |  |  |  |
| 1.2 | rs11246226 | (A;C) | Decreased risk of schizophrenia in limited stud... |  | Link |  |
| 1.1 | rs13333226 | (A;G) | Slightly lower risk for hypertension |  |  | Link |
| 1 | rs11601907 | (C;T) | Variant allele is designated benign in ClinVar | Link |  | Link |
| 1 | rs182549 | (C;T) | Can digest milk. |  |  | Link |
| 1 | rs2351299 | (G;T) | Possible reduced risk of Autism |  |  |  |
| 1 | rs2546890 | (G;G) | Lower risk of multiple sclerosis |  |  |  |
| 1 | rs2952768 | (C;T) | Slightly less drug dependence: decreased effect... |  |  |  |
| 1 | rs4939827 | (C;T) | 0.86x decreased risk for colorectal cancer |  | Link |  |
| 0.1 | rs891512 | (G;G) | Lower blood pressure than those with an A allel... | Link |  |  |
| 0 | rs1047781 | (A;A) | ABH blood group "Secretor" status if Japanese | Link | Link | Link |
| 0 | rs10897346 | (C;C) | If depressed: 2.6 x more likely to not respond t... |  |  |  |
| 0 | rs1126742 | ( $\mathrm{T} ; \mathrm{T}$ ) | Higher hypertension risk | Link | Link |  |
| 0 | rs12252 | ( $\mathrm{T} ; \mathrm{T}$ ) | More resistant to influenza | Link |  | Link |
| 0 | rs12593929 | ( $\mathrm{A} ; \mathrm{A}$ ) | Blue eye color more likely |  |  |  |
| 0 | rs16947 | ( $\mathrm{A} ; \mathrm{A}$ ) | Homozygous for CYP2D6 variants (non-CYP2D6*1) | Link | Link | Link |
| 0 | rs16990018 | (A;A) | PrP Codon 171 Asn - Non-pathogenic variant | Link |  | Link |
| 0 | rs17244841 | (A;A) | More responsive to statin treatment |  | Link |  |
| 0 | rs1799782 | (C;C) | Lower risk for skin cancer | Link | Link |  |
| 0 | rs1799945 | (C;C) | Not a H63D hemochromatosis carrier. | Link | Link | Link |
| 0 | rs1800562 | (G;G) | Not a C282Y hemochromatosis carrier. | Link | Link | Link |
| 0 | rs2240203 | (A;A) | Blue eye color more likely |  |  |  |
| 0 | rs2306402 | (C;C) | 1.18x increased risk for LOAD |  |  |  |
| 0 | rs242941 | (G;G) | Better response to inhaled corticosteroid in pa... |  | Link |  |
| 0 | rs28933385 | (G;G) | Prion protein Codon 200 (E) - Non pathogenic va... |  |  | Link |
| 0 | rs312481 | (C;C) | Better response to certain calcium channel bloc... |  |  |  |
| 0 | rs403016 | (C;C) | 2 x risk for lupus |  | Link |  |
| 0 | rs5746059 | ( $\mathrm{A} ; \mathrm{A}$ ) | Slightly higher fat mass |  |  |  |
| 0 | rs6259 | (G;G) | Best inverse correlation between tea-drinking: ... | Link | Link |  |
| 0 | rs74315403 | (G;G) | PrP codon 178 (D) - non pathogenic variant |  |  | Link |
| 0 | rs7495174 | (A;A) | Blue/gray eyes more likely |  | Link |  |
| 0 | rs8028689 | ( $\mathrm{T} ; \mathrm{T}$ ) | Blue eye color if part of blue eye color haplot... |  |  |  |
| 0 | rs9951307 | (A;G) | 0.10 decreased risk for brain edema after a str... |  |  |  |

## - Possibly Harmful Traits

| Mag. | Identifier | Genotype | Summary | ExAC | GetEvidence | ClinVar |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 3 | rs13266634 | (C;C) | Increased risk for type-2 diabetes | Link | Link | Link |
| 3 | rs2066844 | (C;T) | 3x higher risk for Crohn's disease | Link | Link | Link |
| 3 | rs2981582 | ( $\mathrm{C} ; \mathrm{T}$ ) | 1.3x higher risk of ER + breast cancer |  | Link |  |
| 3 | rs4244285 | (A;G) | Poorer metabolizer of several popular medicines... | Link | Link | Link |
| 3 | rs6920220 | (A;G) | 1.2x risk Rheumatoid Arthritis |  | Link |  |
| 2.7 | rs10830963 | (C;G) | Increased type-2 diabetes risk; higher gestatio... |  | Link |  |
| 2.5 | rs1121980 | (C;T) | 1.67 x risk for obesity |  | Link |  |
| 2.5 | rs1421085 | (C;T) | ~1.3x increased obesity risk |  | Link | Link |
| 2.5 | rs16969968 | (A;G) | Slightly higher risk for nicotine dependence: l... | Link | Link | Link |
| 2.5 | rs1799971 | (A;G) | Stronger cravings for alcohol. if alcoholic: na... | Link | Link | Link |
| 2.5 | rs2073963 | (G;G) | Increased risk of baldness |  |  |  |
| 2.5 | rs2254958 | (C;C) | 1.61x increased risk for Alzheimer's |  |  |  |
| 2.5 | rs2943634 | (C;C) | Higher risk of ischemic stroke |  | Link |  |
| 2.5 | rs339331 | (T; T ) | Prostate cancer risk |  |  |  |
| 2.5 | rs3738919 | (C;C) | 1.94x risk of developing rheumatoid arthritis |  |  |  |
| 2.5 | rs5219 | (T; T) | 2.5x increased risk for type-2 diabetes | Link | Link | Link |
| 2.5 | rs5888 | (C;T) | 3 x higher risk for age-related macular degenera... | Link |  |  |
| 2.5 | rs664143 | (C;T) | Higher risk for number of cancers |  |  |  |
| 2.5 | rs7574865 | (G;T) | 1.3x risk of rheumatoid arthritis; 1.55x risk o... |  | Link | Link |
| 2.5 | rs8034191 | (C;T) | 1.27x lung cancer risk |  | Link |  |
| 2.5 | rs9934438 | ( $\mathrm{A} ; \mathrm{A}$ ) | Coumadin resistance |  | Link | Link |
| 2.4 | rs1143679 | (A;G) | 1.78x increased risk for SLE | Link | Link |  |
| 2.2 | rs1052133 | (G;G) | 2x increased bladder cancer risk; 4.5x increase... | Link | Link |  |
| 2.2 | rs2231137 | (G;G) | ${ }^{\sim} 1.5-3 \mathrm{x}$ increased risk for ischemic stroke | Link | Link | Link |
| 2.1 | rs10811661 | (T; T ) | 1.2x increased risk for type-2 diabetes |  | Link |  |
| 2.1 | rs1329428 | (G;G) | 2 x increased risk for macular degeneration |  |  |  |
| 2.1 | rs1695 | (G;G) | 3.5 x asthma risk in certain populations | Link | Link |  |
| 2.1 | rs17563 | (C;C) | Risk for otosclerosis | Link | Link | Link |
| 2.1 | rs4402960 | ( $\mathrm{T} ; \mathrm{T}$ ) | 1.2x increased risk for type-2 diabetes |  | Link | Link |
| 2.1 | rs5186 | $(\mathrm{A} ; \mathrm{C})$ | ${ }^{\sim} 1.4 \mathrm{x}$ increased risk of hypertension | Link | Link | Link |
| 2.1 | rs7837688 | (G;G) | 1.7x increased risk for prostate cancer |  |  |  |
| 2.1 | rs795484 | (A;G) | Increased morphine dose requirement and postope... |  |  |  |
| 2.1 | rs9272346 | (A;G) | 5.5x risk type-1 diabetes |  | Link |  |
| 2 | rs1024611 | (C;T) | Increased risk of exercise induced ischemia |  |  | Link |
| 2 | rs10248420 | (A;A) | 7x less likely to respond to certain antidepres... |  | Link |  |
| 2 | rs1045642 | (C;T) | Slower metaboliser for some drugs | Link | Link |  |
| 2 | rs1050152 | (C;T) | 2.1x increased risk of Crohn's disease | Link | Link | Link |
| 2 | rs1050631 | (C;T) | Mean Survival Time of 25 months for esophageal ... | Link |  |  |
| 2 | rs1051730 | (C;T) | 1.3x increased risk of lung cancer | Link | Link | Link |
| 2 | rs10984447 | (A;A) | >1.17x increased risk for multiple sclerosis |  | Link |  |
| 2 | rs11171739 | (C;C) | 1.75x risk of developing Type-1 diabetes |  | Link |  |
| 2 | rs11190870 | (C;T) | Possibly increased risk of scoliosis |  |  |  |
| 2 | rs1160312 | (A;G) | 1.6x increased risk of Male Pattern Baldness. |  | Link |  |
| 2 | rs11983225 | (T; T ) | 7x less likely to respond to certain antidepres... |  | Link |  |
| 2 | rs1219648 | (A;G) | 1.20x risk for breast cancer |  | Link |  |
| 2 | rs12567232 | ( $\mathrm{A} ; \mathrm{A}$ ) | Increased risk for Crohn's Disease |  | Link |  |
| 2 | rs1585215 | (A;G) | 2x increased risk for Hodgkin lymphoma |  |  |  |
| 2 | rs1691053 | (A;G) | Increased risk of developing prostate cancer |  |  |  |
| 2 | rs16944 | (G;G) | Increased risk of mental disorders |  | Link |  |
| 2 | rs17228212 | (C;C) | $>1.26 \mathrm{x}$ increased risk for heart disease |  | Link |  |
| 2 | rs1734791 | (A;A) | 1.4 x increased risk for lupus |  |  |  |
| 2 | rs1800896 | (A;A) | 1.8x increased prostate cancer risk |  |  |  |
| 2 | rs187238 | (G;G) | Hypertension increases risk 3.75x for sudden ca... |  |  |  |


| Mag. | Identifier | Genotype | Summary | ExAC | GetEvidence | ClinVar |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2 | rs2156921 | (A;G) | 1.29 x increased risk for depression |  |  |  |
| 2 | rs2201841 | (C;C) | 1.5x increased risk for Crohn's disease |  | Link |  |
| 2 | rs2235015 | (G;G) | Somewhat less likely to respond to certain anti... | Link | Link |  |
| 2 | rs2235040 | (G;G) | 7x less likely to respond to certain antidepres... | Link | Link |  |
| 2 | rs2235067 | (G;G) | 7x less likely to respond to certain antidepres... |  |  |  |
| 2 | rs2305480 | (C;T) | 3.5x increase in risk of asthma for Han Chinese... | Link | Link |  |
| 2 | rs2305795 | (A;G) | 1.28x higher risk of narcolepsy compared to (G;... |  |  | Link |
| 2 | rs2352028 | (T;T) | Increased risk of lung cancer in non-smokers an... |  | Link |  |
| 2 | rs2420946 | (C;T) | 1.20x risk for breast cancer |  |  |  |
| 2 | rs25487 | (G;G) | 2 x higher risk for skin cancer; possibly other ... | Link | Link |  |
| 2 | rs2707466 | (G;G) | Weaker bones | Link | Link |  |
| 2 | rs27388 | (A;A) | Increased risk of developing schizophrenia |  |  |  |
| 2 | rs2908004 | (C;C) | Weaker bones | Link | Link |  |
| 2 | rs3129934 | (C;T) | Increased risk of Multiple Sclerosis. |  | Link |  |
| 2 | rs3184504 | (C;T) | Increased risk for celiac disease | Link | Link |  |
| 2 | rs3212227 | $(\mathrm{A} ; \mathrm{C})$ | Significantly increased risk of developing cerv... |  |  |  |
| 2 | rs358806 | (C;C) | 1.78x increased risk of developing Type-2 diabe... |  | Link |  |
| 2 | rs3746444 | (C;T) | ${ }^{\sim} 1.2 \mathrm{x}$ increased risk for cancer | Link |  |  |
| 2 | rs3775948 | (G;G) | Slightly higher risk for gout |  |  |  |
| 2 | rs4148739 | (A;A) | 7x less likely to respond to certain antidepres... |  | Link |  |
| 2 | rs4420638 | (A;G) | ~3x increased Alzheimer's risk; 1.4x increased ... |  | Link | Link |
| 2 | rs4633 | (C;T) | Higher risk for endometrial cancer | Link | Link |  |
| 2 | rs4792311 | (A;G) | Increased risk of prostate cancer | Link | Link | Link |
| 2 | rs4961 | (G;T) | 1.8x increased risk for high blood pressure | Link | Link | Link |
| 2 | rs520354 | (A;G) | Increased risk in men for biliary conditions |  |  |  |
| 2 | rs6457617 | (C;T) | 2.3 x risk of rheumatoid arthritis |  | Link |  |
| 2 | rs6498169 | (A;A) | $>1.14 \mathrm{x}$ risk of multiple sclerosis |  | Link |  |
| 2 | rs6601764 | (C;C) | 1.52x increased risk of developing Crohn's dise... |  | Link |  |
| 2 | rs663048 | (G;T) | Significantly increased risk of developing lung... | Link | Link |  |
| 2 | rs669 | (G;G) | 3.8x or higher increased risk for Alzheimers | Link | Link | Link |
| 2 | rs6897932 | (C;T) | 1.3 x increased risk for multiple sclerosis | Link | Link | Link |
| 2 | rs6997709 | (G;T) | 1.2 x higher risk for hypertension |  |  |  |
| 2 | rs699 | (C;T) | Increased risk of hypertension | Link | Link | Link |
| 2 | rs7442295 | (A;A) | $\sim 4 \mathrm{x}$ higher risk for hyperuracemia |  | Link |  |
| 2 | rs7639618 | (C;T) | 1.45x increased osteoarthritis risk | Link |  |  |
| 2 | rs7961152 | (A;C) | 1.2x higher risk for hypertension |  |  |  |
| 2 | rs800292 | (C;C) | $5 \%$ higher risk of Age related macular degenerat... | Link | Link | Link |
| 2 | rs828907 | (T;T) | Increased risk of bladder cancer and 2x risk of... |  |  |  |
| 2 | rs9525638 | ( $\mathrm{T} ; \mathrm{T}$ ) | Weaker bones |  |  |  |
| 2 | rs9652490 | ( $\mathrm{A} ; \mathrm{A}$ ) | 2x increased risk for Parkinson's disease: and... |  | Link |  |
| 2.0 | rs4911414 | (G;T) | $2-4 \mathrm{x}$ higher risk of sun sensitivity if part of ... |  | Link |  |
| 1.9 | rs7923837 | (A;G) | 1.6x risk for T2D |  |  |  |
| 1.8 | rs37973 | (A;G) | Among asthmatics: 1.5x more likely to show less... |  |  | Link |
| 1.8 | rs4474514 | (A;G) | 3 x increased testicular cancer risk for men |  | Link |  |
| 1.7 | rs8055236 | (G;T) | 1.9x risk for heart disease |  | Link |  |
| 1.6 | rs11523871 | $(\mathrm{A} ; \mathrm{C})$ | 1.6x increased breast cancer risk for women ove... | Link | Link |  |
| 1.6 | rs1537415 | (C;G) | 1.6x increased risk for periodontitis |  | Link |  |
| 1.6 | rs2981745 | (C;T) | 1.6x increased risk for breast cancer in female... |  |  |  |
| 1.5 | rs10492519 | (A;G) | Slightly increased risk of developing prostate ... |  |  |  |
| 1.5 | rs10883365 | (A;G) | 1.2x increased risk for developing Crohn's dise... |  | Link |  |
| 1.5 | rs10889677 | (A;A) | 1.5x increased risk for certain autoimmune dise... |  | Link |  |
| 1.5 | rs12431733 | (C;T) | Slightly increased risk of developing Parkinson... |  | Link |  |
| 1.5 | rs12498742 | (A;A) | 1.25 increased risk for gout |  |  |  |
| 1.5 | rs13149290 | (C;C) | Slightly increased risk of developing prostate ... |  |  |  |
| 1.5 | rs13181 | (G;T) | 1.12 x increased risk for cutaneous melanoma | Link | Link | Link |


| Mag. | Identifier | Genotype | Summary | ExAC | GetEvidence | ClinVar |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1.5 | rs13376333 | (C;T) | 1.5x higher risk of atrial fibrillation |  | Link |  |
| 1.5 | rs17221417 | (C;G) | 1.3x higher risk for Crohn's disease |  | Link |  |
| 1.5 | rs1801274 | (C;T) | Complex; generally greater risk for cancer prog... | Link | Link | Link |
| 1.5 | rs2076295 | (G;G) | Slightly increased risk for pulmonary fibrosis ... |  |  |  |
| 1.5 | rs2241880 | (C;T) | 1.4x increased risk for Crohn's disease in Cauc... | Link | Link | Link |
| 1.5 | rs2280714 | ( $\mathrm{A} ; \mathrm{A}$ ) | 1.4x increased risk of SLE |  |  |  |
| 1.5 | rs28694718 | (A;G) | 2 x higher risk for schizophrenia |  |  |  |
| 1.5 | rs2881766 | ( $\mathrm{T} ; \mathrm{T}$ ) | Slightly increased risk for pregnancy-induced h... |  |  |  |
| 1.5 | rs3087243 | (A;G) | Increased risk for auto-immune diseases |  | Link |  |
| 1.5 | rs3825776 | (A;G) | 1.3x increased risk for ALS |  | Link |  |
| 1.5 | rs393152 | ( $\mathrm{A} ; \mathrm{A}$ ) | Increased risk of both PD and AD | Link | Link |  |
| 1.5 | rs4027132 | (A;G) | 1.39x increased risk of developing bipolar diso... |  |  |  |
| 1.5 | rs4464148 | (C;T) | 1.10x increased risk for colorectal cancer |  |  |  |
| 1.5 | rs4506565 | $(\mathrm{A} ; \mathrm{T})$ | 1.4 x increased risk for type-2 diabetes |  | Link |  |
| 1.5 | rs464049 | (T; T) | Increased risk of schizophrenia in limited stud... |  |  |  |
| 1.5 | rs486907 | (A;G) | 1.5x increased prostate cancer risk | Link | Link | Link |
| 1.5 | rs6435862 | (G;T) | 1.7 x higher risk of aggressive neuroblastoma |  | Link |  |
| 1.5 | rs6896702 | (C;T) | Slightly increased risk of developing Parkinson... |  |  |  |
| 1.5 | rs7341475 | (G;G) | 1.58x increased schizophrenia risk for women |  | Link |  |
| 1.5 | rs7536563 | (A;G) | 1.12x risk of multiple sclerosis |  | Link |  |
| 1.5 | rs7850258 | (G;G) | Slightly higher odds of developing primary hypo... |  |  |  |
| 1.5 | rs807701 | (C;T) | Slightly increased dyslexia risk |  |  |  |
| 1.5 | rs9303277 | (C;T) | 1.46x Slightly increased risk of developing pri... |  |  |  |
| 1.5 | rs966221 | (C;C) | 1.5x increased stroke risk certain populations |  |  |  |
| 1.4 | rs1545843 | (A;A) | 1.4 x increased risk for depression (for those u... |  |  |  |
| 1.4 | rs2046210 | (C;T) | 1.4 x increased breast cancer risk |  | Link |  |
| 1.4 | rs2230201 | (A;G) | 1.4x risk of lupus | Link |  |  |
| 1.4 | rs3131296 | (G;G) | 1.4x increased risk for schizophrenia |  | Link |  |
| 1.4 | rs4795067 | (G;G) | Slight increase in risk for psoriatic arthritis... |  |  |  |
| 1.4 | rs4977756 | (G;G) | 1.4x higher risk for glioma development |  | Link |  |
| 1.3 | rs10947262 | (C;C) | 1.3 x increased risk for osteoarthritis |  |  |  |
| 1.3 | rs1260326 | (C;T) | Slightly higher risk for gout | Link | Link | Link |
| 1.3 | rs1434536 | (A;G) | 1.29x increased breast cancer risk |  |  |  |
| 1.3 | rs16847548 | (C;T) | 1.3x increased risk for sudden cardiac death in... |  |  |  |
| 1.3 | rs2736100 | (G;T) | 1.3x higher risk for glioma development |  | Link |  |
| 1.25 | rs748404 | (T; T ) | Slightly increased risk (1.25) for lung cancer... |  | Link |  |
| 1.2 | rs10865331 | (A;G) | 1.2x higher risk for ankylosing spondylitis |  |  |  |
| 1.2 | rs11037909 | (T; T ) | 1.47x type II diabetes risk | Link |  |  |
| 1.2 | rs11842874 | (A;G) | $+17 \%$ increased risk for osteoarthritis |  |  |  |
| 1.2 | rs143383 | (C;T) | 1.1x increased risk for osteoarthritis |  | Link | Link |
| 1.2 | rs2056116 | (A;G) | 1.18 x risk for breast cancer |  |  |  |
| 1.2 | rs2252586 | (A;G) | 1.2x higher risk for glioma development |  |  |  |
| 1.2 | rs2665390 | (C;T) | 1.2 x increased risk for ovarian cancer |  |  |  |
| 1.2 | rs3740878 | ( $\mathrm{A} ; \mathrm{A}$ ) | 1.46x type II diabetes risk; common | Link |  |  |
| 1.2 | rs419788 | (A;G) | 2.0x risk for lupus | Link |  |  |
| 1.2 | rs4686484 | (A;A) | Slightly increased risk for celiac disease |  |  |  |
| 1.2 | rs6010620 | (A;G) | 1.2x higher risk for glioma development: 1.17 x ... |  | Link |  |
| 1.2 | rs8050136 | $(\mathrm{A} ; \mathrm{C})$ | 1.2x increased risk for T2D in some populations... |  | Link |  |
| 1.2 | rs9858542 | (A;G) | 1.1x risk Crohn's Disease | Link | Link |  |
| 1.17 | rs17465637 | (A;C) | 1.17x higher risk for myocardial infarction | Link | Link |  |
| 1.1 | rs11110912 | (C;C) | 1.3x high blood pressure risk |  |  |  |
| 1.1 | rs13387042 | (A;G) | 1.12x increased risk for breast cancer |  | Link |  |
| 1.1 | rs1800450 | (A;G) | Mannose binding deficiency but of low clinical ... | Link | Link | Link |
| 1.1 | rs2651899 | (A;G) | 1.1x higher risk for migraines |  |  |  |
| 1.1 | rs2653349 | (G;G) | 2-6x increased risk for cluster headaches | Link | Link |  |


| Mag. | Identifier | Genotype | Summary | ExAC | GetEvidence | ClinVar |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1.1 | rs34516635 | (G;G) | Less longevity for Ashkenazi Jewish women. | Link |  | Link |
| 1.1 | rs4324715 | (C;T) | 1.5x increased testicular cancer risk for men |  |  |  |
| 1.1 | rs6897876 | (C;T) | Slight increase in testicular cancer risk for m... |  |  |  |
| 1.1 | rs7171755 | (A;G) | Very slight decrease in cortical thickness and ... |  |  |  |
| 1.1 | rs7412 | (C;C) | More likely to gain weight if taking olanzapine... | Link | Link | Link |
| 1.1 | rs925391 | (C;C) | More likely to go bald; common |  |  |  |
| 1.05 | rs2291834 | (C;T) | Very slightly higher risk for myocardial infarc... |  |  |  |
| 1 | rs10504861 | (G;G) | Major allele: normal risk of migraine |  |  |  |
| 1 | rs1143674 | (A;A) | 1.3x increased autism risk | Link |  |  |
| 1 | rs12718541 | (A;A) | Nicotine dependence |  |  |  |
| 1 | rs3194051 | (A;G) | 1.12 x risk of type-1 diabetes | Link | Link | Link |
| 1 | rs6932590 | (T;T) | 1.1x increased risk for schizophrenia |  | Link |  |
| 1 | rs987525 | ( $\mathrm{A} ; \mathrm{C}$ ) | 2.5x increased risk for cleft lip |  | Link |  |
| 0 | rs10761659 | ( $\mathrm{A} ; \mathrm{A}$ ) | 1.5x risk of Crohn's disease |  | Link |  |
| 0 | rs1333040 | (C;T) | 1.24 x increased myocardial infarction risk: $1.2 \ldots$ |  | Link |  |
| 0 | rs3761418 | ( $\mathrm{A} ; \mathrm{A}$ ) | 1.3x increased risk for depression |  |  |  |
| 0 | rs440446 | (G;G) | Increased risk in men for biliary conditions | Link |  |  |
| 0 | rs6314 | (C;C) | Higher risk for RA | Link | Link |  |
| 0 | rs7787082 | (G;G) | 7x less likely to respond to certain antidepres... |  | Link |  |
| 0 | rs9298506 | (A;A) | Higher Risk Aneurysm |  | Link |  |

- Genosets (Multi-variant Phenotypes)

| Magnitude | Identifier | Summary |
| :--- | :--- | :--- |
| 4 | gs144 | Male |
| 3.1 | gs122 | 7x risk of baldness |
| 3.1 | gs191 | Problem metabolizing NSAIDs |
| 3 | gs114 | Haplogroup R1b1b2a1a1 |
| 3 | gs127 | Intermediate warfarin metabolizer |
| 3 | gs241 | Lighter green: brown or hazel eye color |
| 2.5 | gs155 | CYP3A5 non-expressor |
| 2.5 | gs161 | CYP2C9 Intermediate Metabolizers |
| 2.5 | gs259 | Homozygous for eye color haplotype \#3 |
| 2.5 | gs277 | Increased risk of Atrial Fibrillation in one of... |
| 2.5 | gs281 | Part of the 88\% of the population claimed not t... |
| 2.5 | gs285 | You will lose 2.5x as much weight on a low fat ... |
| 2.3 | gs255 | Homozygous eye color haplotype \#1 |
| 2 | gs101 | Probably able to digest milk |
| 2 | gs159 | CYP1A2 fast metabolizer |
| 2 | gs213 | Haplogroup R (Y-DNA) |
| 2 | gs246 | APOE3/APOE3 |
| 1.5 | gs247 | Parkinson's Disease Risk |
| 0.1 | gs233 | Normal pain sensitivity |

## 4 Report Metadata

| Resource | Version | Website |
| :--- | :--- | :--- |
| Genome | GRCh37 | Link |
| BWA | 0.7 .12 | Link |
| SAMtools | 1.2 | Link |
| GATK | $3.4-46$ | Link |
| PLINK | v1.90b3.35 | Link |
| VEP | 84 | Link |
| SNPedia | 8-Apr-2016 | Link |
| ExAC | v0.3.1 | Link |
| GetEvidence | 8-Apr-2016 | Link |
| ClinVar | 4-Apr-2016 | Link |

Table 5: Analysis Pipeline Versions

Report generated on July 20, 2016 (using report generator version 16-174).

