GenepoweRx™ TOTAL

ASSESSMENT REPORT AND RECOMMENDATIONS

K&H Personalized Medicine

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KNOW WHY GENEPOWERX

GenepoweRx is a Genomic Data Analysis and Interpretation company based in Hyderabad. Founded in 2019 by Dr Kalyan and Dr Hima US board certified Internal medicine physicians with expertise and training in clinical genomics from ivy league institutions (Stanford and Harvard respectively).

GenepoweRx is established with a vision of delivering personalized medicine to every individual.

Proprietary Solutions:

GenepoweRx analytics and interpretation algorithm are developed over last 3 years by interdisciplinary team of Physicians, Molecular Biologists, Bioinformaticians, Cross functional IT team manually curating each variant with phenotype and genotype correlations pertaining to Indian population.

Over 60000-man hours spent in literature search, more than 1 lakh variants are classified using ACMG compliant variant classification.

GenepoweRx developed a Proprietary Database, completely automated Cloud enabled custom analytic pipelines to convert complex genomic data to easy clinical interpretation, world class compliance and security inscription, efficient programming environment with AI/ML algorithms to interpret DATA.

Global Signatures:

Founders are part of the variant curation committees of CLINVAR, CLINGEN, CPIC which are global databases funded by NIH. GenepoweRx contributed to submitting interpretations pertaining to Indian population to ClinVar.

WELCOME

Date:

Dear

We are enclosing the report of your personal genome analysis along with our recommendations.

This report is designed to help you make informed decisions regarding diet, lifestyle, disease monitoring and health checkups. It gives you an indication of your genetic pre-disposition to specific health conditions. We advise you to follow the nutritional recommendations and take into consideration the suggested preventative measures and medical recommendations as indicated in the report.

Please do reach out to us if you need any assistance with your report at out clinic phone number 9502222300. We are open from 10 am to 6 pm, Monday to Friday.

We hope you find your comprehensive health report useful.

Thank you for choosing K&H Personalized Medicine Clinic as your personal health coach! It was a pleasure taking care of you and we would love to continue taking care of your health!

With regards

Dr. Kalyan Uppaluri M.D FACP

Director

GenepoweRx.

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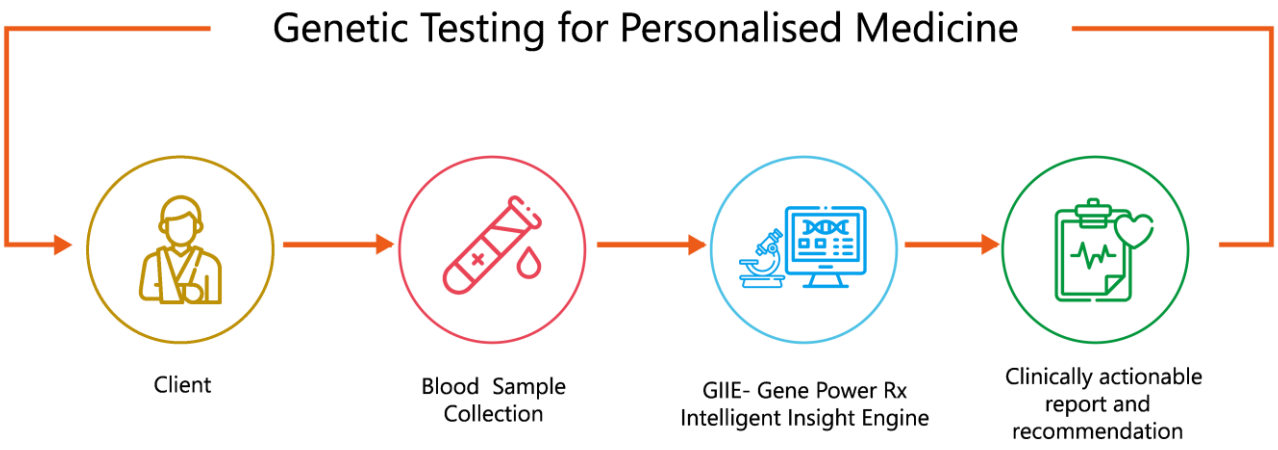
GLOSSARY OF GENETIC TERMS USED IN THE REPORT

Pathogenic Variant	This gene variant is more likely to cause disease
Risk Variant	This gene variant is a risk factor for the disease
Benign Variant	Benign mutations are concerning only if they are located at an important region of the gene and if there are too many of them, otherwise benign variants are usually less likely to cause disease. For some common conditions like diabetes, several benign mutations (>1000) are seen. Hence, their impact is taken into consideration for disease risk prediction. If a gene has several benign variants or if many benign mutations in critical genes are seen for a particular condition - it can lead to disease occurrence.
Homozygous	• Every person has two copies of same chromosome or DNA. Homozygous Normal refers to having same healthy gene in both copies of the DNA. • Homozygous mutant refers to having mutated or altered DNA in both the copies of the gene.
Heterozygous	• Indicates 2 non identical or mismatched copies of a gene. i.e One normal copy and one mutated copy. • The mutations can be Inherited from the parents or acquired (due to various exposures) during one's lifetime. • Low predisposition • Moderate Predisposition • High predisposition

DESCRIPTION OF TEST

Once the blood sample is collected, the first step is to culture harvest primary progenitor cells and extract genetic material (DNA) from them employing established protocol. The extracted genetic material is then prepped and subjected to sequence analysis. The raw data from the omics is then run through a pipeline of customized in-house tools, processes including our proprietary database. The resultant output data is then cataloged based on the cumulative effect of the different gene variants for each condition. Finally, the report is generated based on medical history, food habits and lifestyle.



RISK ASSESSMENT

GenepoweRx has organized all the variants into a disease specific database and a scoring system is developed, based on the clinical impact of the gene and the type of mutation itself.

To get incisive clinician-patient friendly reports, GenepoweRx has taken an in-house approach for translating genomic information into a measurable score to assess the possibility of predisposition to any specific health condition more accurately. This is accomplished by aggregating the effects of all the genomic variations (SNVs) into a single measure called the "genomic risk assessment score". Various parameters considered to assess the effect are Zygosity, consequence of the variant, effect on protein structure and function, statistical strength of the variant and so on. Thresholds are set based on Indian data sets that were analyzed and variants are categorized as Mild, Moderate and High Predisposition.

Additional clinical non static measures are also considered. Combined investigation of genomic, clinical and demographic information is thus very scientific method built to predict the probable disease risk and personalize lifestyle and medicine for individuals.

INCLUSION - EXCLUSION CRITERIA

Variants which are reported to have considerable clinical significance such as Pathogenic, Likely pathogenic, risk factor variants, benign variants are screened for each case. Of these, variants with high scientific evidence such as reviewed by expert panel, practice guideline variants and submitted by multiple research groups are alone considered for reporting.

Variants with insufficient evidence or conflicting interpretations, novel variants are not considered for genomic evaluation. Gene variants with no defined criteria, poor evidence and uncertain clinical significance are also not considered for screening. However, in cases with specific clinical condition and existing familial conditions, the inclusion/exclusion criterion is relaxed and all variants are screened for reporting.

VARIANT IDENTIFICATION AND INTERPRETATION

These are critical steps in making genetic diagnosis and personalized medicine a reality. The in-house method of variant classification at GenePoweRx complies with the American College of Medical Genetics (ACMG) standards. We devised standard internal guidelines to assess the robustness of publicly available information, gene-disease relationship, the clinical impact of nucleotide variations, the availability of treatments, and preventive measures. Internal criteria are designed to refine ACMG/AMP guidelines based on the latest data available for assessing the strength of the variant and the most recent information specific to genes & gene-phenotype association. The term variant can be used to describe an alteration that may be benign, pathogenic, or of unknown significance. Though benign variants do not cause the disease directly, they are known to be associated with specific condition. These variants in combination with other potential genetic variants, environmental, and lifestyle factors can trigger the condition.

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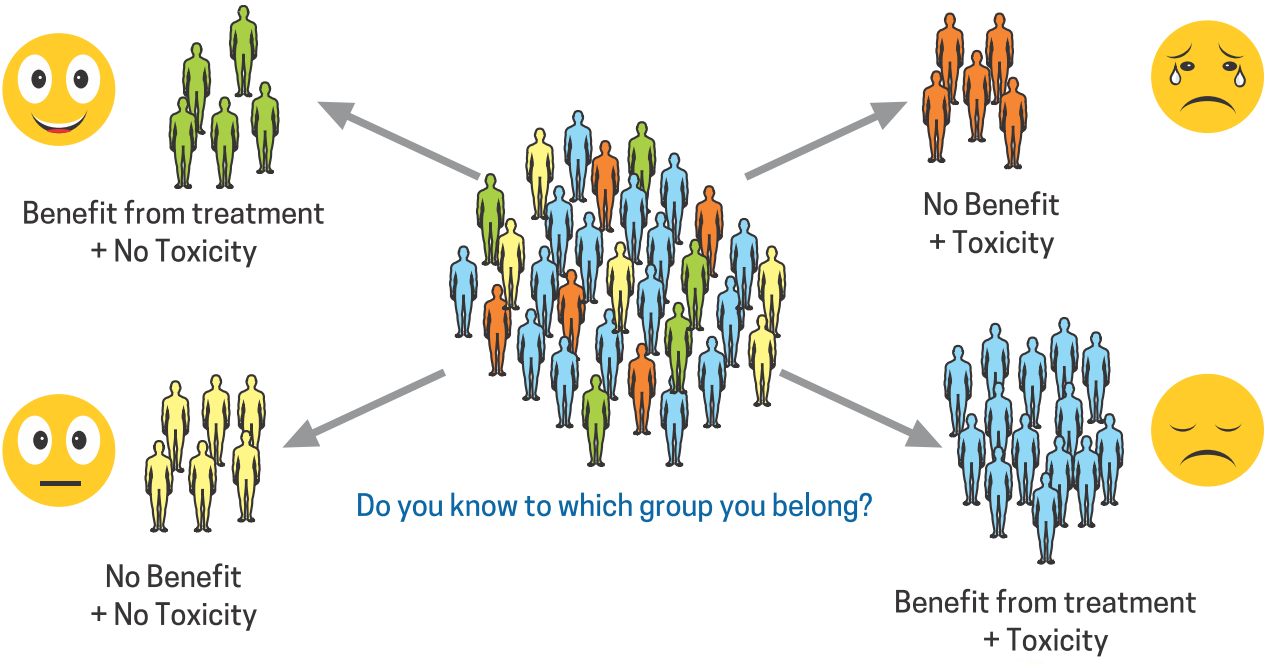
PHARMACOGENOMICS

This test also includes Pharmacogenomics (PGx), which looks for the patient's response to medications. PGx test is intended for use as a directional test for drug decision making explicitly for people with various metabolic disorders, cardiac conditions and can be extended to the general population for precision medicine. This test will aid in understanding the patients' probable reaction to specific medicines with the approved therapeutic product labeling and helps in choosing the right drug to prevent treatment failure and side effects.

PGx at GenepoweRx is done with next generation sequencing (NGS) based qualitative diagnostic test that utilizes innovative bead-based chemistry followed by exome capture technology and sequenced at a higher depth.

At GenepoweRx, collective information of altered & healthy DNA is considered to evaluate response to particular drugs. The genomic data is processed through standard bioinformatics tools, evaluated by various in-house pipelines and curated database information. Genomic information backed by scientific evidence from clinically and statistically significant studies is further considered for explicit personalized pharmacogenomics report preparation.

CPIC & PharmGkb approved pharmacogenetic biomarkers with significant genotype-phenotype relationship (from 1294 SNVs of 494 genes) are evaluated for FDA approved drugs, for assessing the clinical response of the patients to the medications.



Interpretation Methodology of GenepoweRx® Comprehensive genomics Test

1. **Value allocation to disease-specific variants includes the assignment of values based on 10 different attributes of the variant, to derive a single score for each variant.**
2. **Normalization of the variant scores based on the disease conditions**
3. **The statistical significance is calculated and the ambiguous SNPs which do not attain the statistical significance are excluded. [statistics used: (t-tests and subsequent Z-scores (for determining the importance of each component when predicting this set))]**
4. **Analyze data statistically to derive FDR values and eliminate the false positives according to the FDR threshold**
5. **Identify cumulative frequency for final risk estimation**
6. **Repeat the steps for Molecular scoring and Physician clinical score**
7. **Load end values on a 10-point scale**
8. **Any records with no clinical significance are further checked through online analytics platforms about their genotypic and phenotypic information.**

MEDICAL RECOMMENDATIONS

YOUR CURRENT MEDICAL CONCERNS:

1. Concern- Diabetes

Mild Chances

Number of Genomic Variants analyzed- 945

Scale based on Algorithm, compared to general population-

Recommendations-

- **Less likely to have uncontrolled diabetes and complications.**
- **Please monitor your HbA1C every 6 months.**
- **Avoid refined sugars, white rice, sugary drinks.**
- **Your carbohydrate sources should be complex carbs whole grains (Brown Rice, Hand Pounded Rice, Millets, Whole wheat flour), Green leafy vegetables.**

List of Top Publications:

- https://pubmed.ncbi.nlm.nih.gov/31517624/
- https://pubmed.ncbi.nlm.nih.gov/35328643/

MEDICAL RECOMMENDATIONS

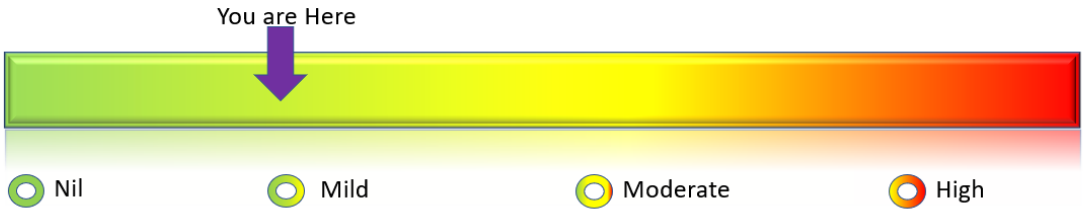
OTHER MEDICAL RECOMMENDATIONS:

2. High Blood Pressure

Mild Chances

Number of Genomic Variants analyzed- 16286

Scale based on Algorithm, compared to general population-



Recommendations-

- You have a few genes which predispose you to **high Blood Pressure (WNK1, SCNN1B, ACE)**.
- **Recommend meditation, stress management.**
- **Include a variety of fresh vegetables in your diet daily.**

List of Top Publications:

- https://pubmed.ncbi.nlm.nih.gov/21768522/
- https://pubmed.ncbi.nlm.nih.gov/36193739/
- https://pubmed.ncbi.nlm.nih.gov/30908459/

MEDICAL RECOMMENDATIONS

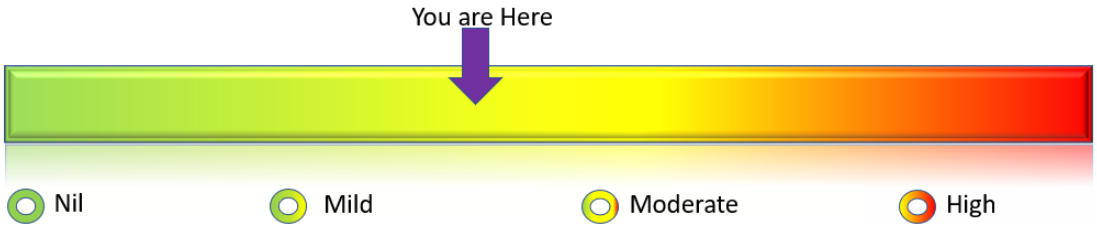
OTHER MEDICAL RECOMMENDATIONS:

3. Cholesterol Disorders

Mild to Moderate Chances

Number of Genomic Variants analyzed- 3277

Scale based on Algorithm, compared to general population-



Recommendations-

- You have a few benign variants for **Hypercholesterolemia (PCSK9, NOS3, LIPC, APOB, MTTP, LDLR)**
- **Monitor Lipid levels every 6 months.**
- **Avoid excessive fatty food intake.**

List of Top Publications:

- https://pubmed.ncbi.nlm.nih.gov/30420622/
- https://pubmed.ncbi.nlm.nih.gov/17762636/
- https://pubmed.ncbi.nlm.nih.gov/33296900/

MEDICAL RECOMMENDATIONS

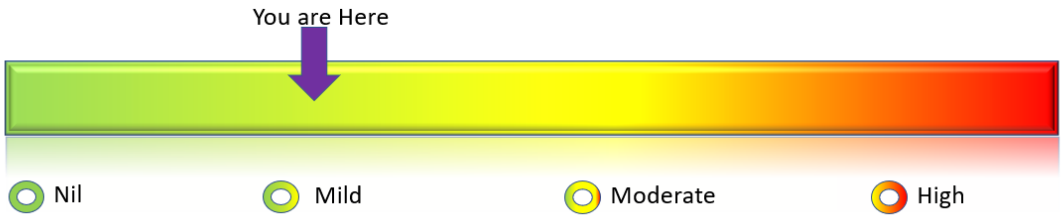
OTHER MEDICAL RECOMMENDATIONS:

4. Renal Disorders

Mild chances

Number of Genomic Variants analyzed- 4142

Scale based on Algorithm, compared to general population-



Recommendations-

- **Monitor renal functions, urine protein levels every 6 months.**
- **Maintain BP. Include regular physical activity.**

List of Top Publications:

- https://pubmed.ncbi.nlm.nih.gov/34995479/
- https://pubmed.ncbi.nlm.nih.gov/33940108/
- https://pubmed.ncbi.nlm.nih.gov/36619171/

MEDICAL RECOMMENDATIONS

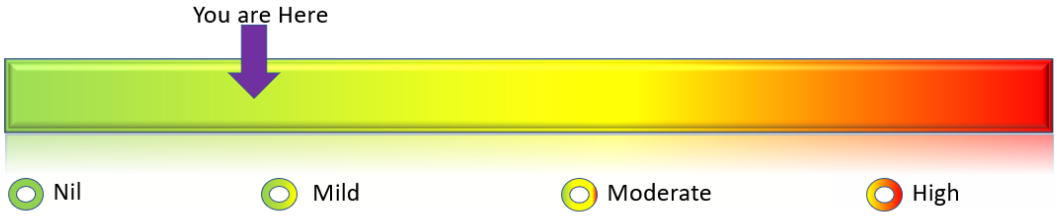
OTHER MEDICAL RECOMMENDATIONS:

5. Musculoskeletal Issues

Mild chance of low back disc degeneration problem

Number of Genomic Variants analyzed- 15258

Scale based on Algorithm, compared to general population-



Recommendations-

- **If you have symptoms of back ache please let your doctor know.**
- **Regular physical activity**
- **Include calcium rich foods in your diet like sunflower seeds, pumpkin seeds, green leafy vegetables.**

List of Top Publications:

- https://pubmed.ncbi.nlm.nih.gov/30755787/
- https://pubmed.ncbi.nlm.nih.gov/34725346/
- https://pubmed.ncbi.nlm.nih.gov/33910361/

MEDICAL RECOMMENDATIONS

OTHER MEDICAL RECOMMENDATIONS:

6. Respiratory allergies

Mild Chances

Number of Genomic Variants analyzed- 2869

Scale based on Algorithm, compared to general population-

Recommendations-

- **Avoid known allergens.**
- **Recommend intake of warm water.**
- **Steaming during cold weather.**

List of Top Publications:

- https://pubmed.ncbi.nlm.nih.gov/27486783/
- https://pubmed.ncbi.nlm.nih.gov/20301301/

MEDICAL RECOMMENDATIONS

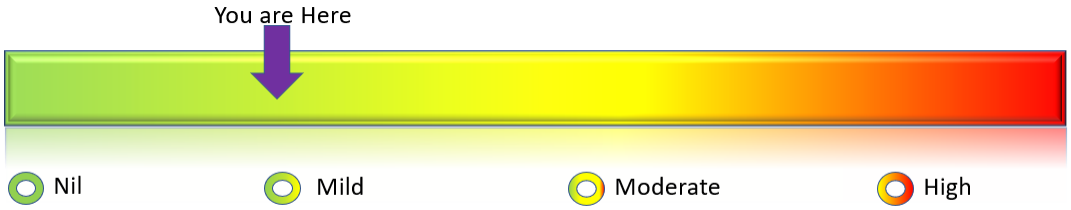
OTHER MEDICAL RECOMMENDATIONS:

7. Dry Skin, skin disorders

Mild chances

Number of Genomic Variants analyzed- 3623

Scale based on Algorithm, compared to general population-



Recommendations-

- **Can predispose to fragile skin, increased skin breakdown.**
- **Recommend regular moisturizer.**
- **Avoid fried foods.**
- **Recommend regular moisturizer.**
- **Include beans, lentils, eggs on a regular basis.**

List of Top Publications:

- https://pubmed.ncbi.nlm.nih.gov/31374826/
- https://pubmed.ncbi.nlm.nih.gov/22044607/
- https://pubmed.ncbi.nlm.nih.gov/20301481/

MEDICAL RECOMMENDATIONS

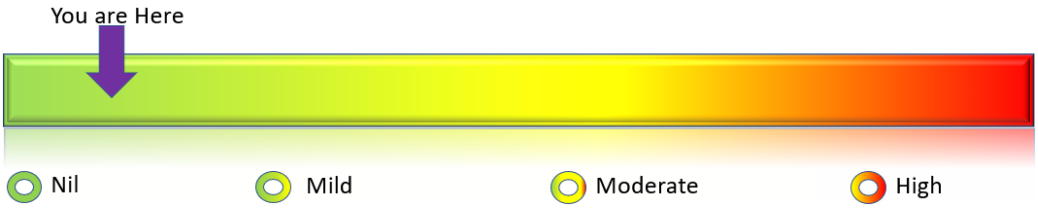
OTHER MEDICAL RECOMMENDATIONS:

8. Heart Disease

Low Chances

Number of Genomic Variants analyzed- 16286

Scale based on Algorithm, compared to general population-



Recommendations-

- **Stress test, Echocardiogram.**
- **Regular physical activity.**
- **Include diet rich in vegetables.**

List of Top Publications:

- https://pubmed.ncbi.nlm.nih.gov/34209044/
- https://pubmed.ncbi.nlm.nih.gov/34272501/
- https://pubmed.ncbi.nlm.nih.gov/35348004/

MEDICAL RECOMMENDATIONS

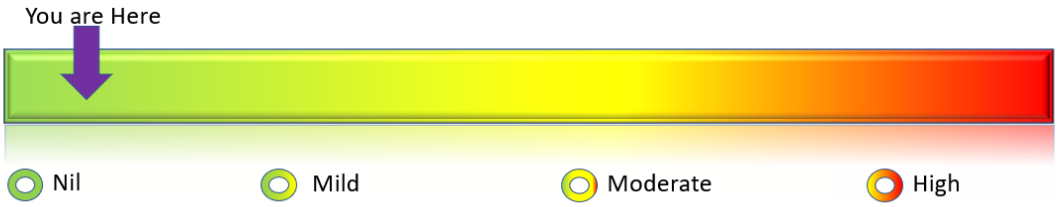
OTHER MEDICAL RECOMMENDATIONS:

9. Thyroid Disorders

Low Chances

Number of Genomic Variants analyzed- 324

Scale based on Algorithm, compared to general population-



Recommendations-

- **Recommend yearly TSH and Free T4 checks**

List of Top Publications:

- https://pubmed.ncbi.nlm.nih.gov/24460189/
- https://pubmed.ncbi.nlm.nih.gov/30367059/
- https://pubmed.ncbi.nlm.nih.gov/29320965/

MEDICAL RECOMMENDATIONS

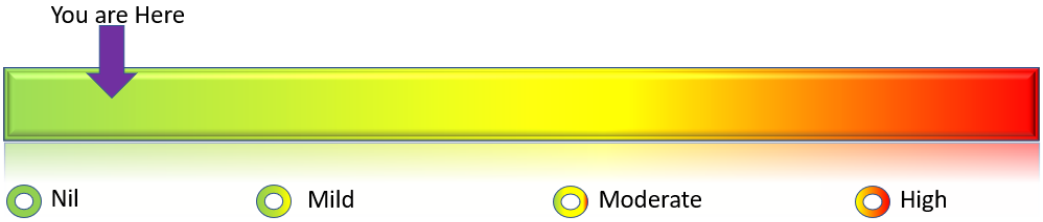
OTHER MEDICAL RECOMMENDATIONS:

10. Gastrointestinal Health, Liver and Pancreatic Disorders

Low Chances

Number of Genomic Variants analyzed- 133

Scale based on Algorithm, compared to general population-



Recommendations-

- **Include fermented foods like buttermilk, sprouts.**
- **Avoid spicy food.**

List of Top Publications:

- https://pubmed.ncbi.nlm.nih.gov/32740003/
- https://pubmed.ncbi.nlm.nih.gov/30376976/
- https://pubmed.ncbi.nlm.nih.gov/31932215/

IMMUNITY PROFILE

You have homozygous mutations in the following genes, which are clinically pertinent-

CR2- Mutations can lead to abnormalities in B cell activation. Therefore, can lead to increased risk of bacterial infections. **Frequent sore throats. Need to start antibiotic with onset of fever, rotate antibiotics to prevent resistance.**

TNFRSF13B- Mutation in this gene predisposes to severe respiratory infections. **Include regular breathing exercises or Yoga.**

CD19- Mutations can predispose to recurrent infections, which can take a severe course. **Regular vitamin D levels. Include zinc rich food in your diet, spinach, nuts, legumes. Include warm foods in diet. Avoid cold foods.**

CYBA- Mutations in this gene lead to failure of activated phagocytes to produce superoxide. This predisposes to increased infections from microbes. **Need to maintain proper hand hygiene and avoid eating outside.**

IL10RA- Mutations in this gene activates proinflammatory cytokines. Predisposes to Inflammatory disorders. Anti inflammatory diet. Anti oxidants should be part of your daily diet. **Vit C and Flavanoids abundant food is recommended.**

CANCER RISKS

No elevated risk of cancers, including prostate cancer compared to general population. Recommend age appropriate screening as per recommendations.

PSA screening.

Colonoscopy.

FITNESS RECOMMENDATIONS

Below is a snapshot of your fitness genomics -

1. Genes for Glycogen Storage Disorders seen- **Need a pre workout snack rich in complex carbohydrates as glucose may not be readily available during work outs.**
2. Genes for Glycosylation disorders seen- Can cause hypoglycemia, decreased muscle tone. **After work out, include a meal rich in complex carbohydrates and proteins.**
3. **Avoid cold foods like ice creams- Positive for a gene, NLRP3,** Excessive cold exposure, ingestion of cold foods, stress can lead to joint dysfunction, muscle aches, fatigue.
4. **Genes for Collagen Related Myopathy-** Can cause muscle cramps after strenuous activity. **Include foods like bone broth, nuts, beans, fish, broccoli, whole grains.**

Recommendations

1. **Maintain Daily routine** as much as possible- sleep timings, Meal timings, Daily workout timings.
2. **Include a 40 minute workout every day** without fail. Prefer brisk walking/ yoga.
3. Every morning start your day with a glass of warm water followed by 10 minutes of breathing exercise.
4. Include yoga with focus on meditation at least 2 times a week.

NUTRITION RECOMMENDATIONS

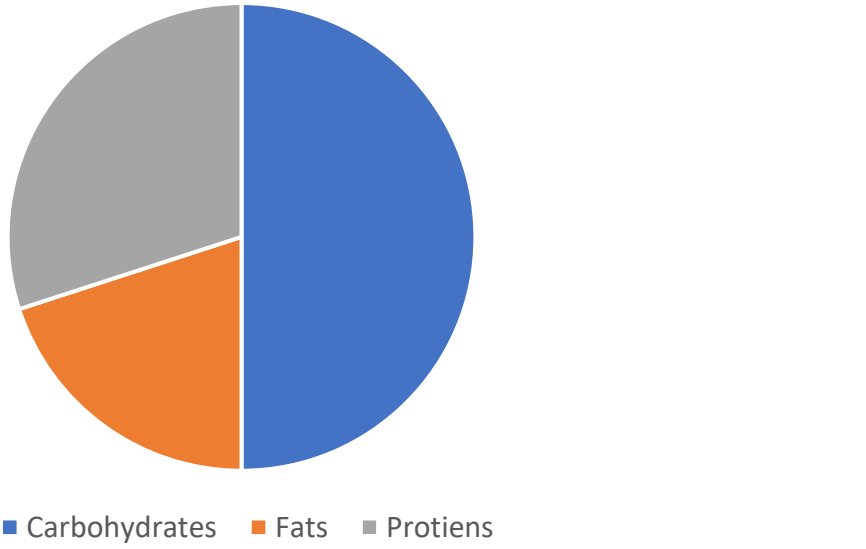
a. Nutrigenomics	
Carbohydrate Metabolism	❖ **Glycogen Storage Disorders- Need a pre workout snack rich in complex carbohydrates** as glucose may not be readily available during work outs. Ideas for snacks include a banana, idli with peanut chutney, pomegranate, Avocado toast, oatmeal, almonds, walnuts. Make sure to eat the snack atleast 45 minutes before work out. ❖ **Genes positive for lactose intolerance, Galactosylceramide- beta galactosidase deficiency-** Milk, fresh cheeses, fresh milk cream can cause symptoms of bloating, malabsorption. Avoid fresh dairy. Can include buttermilk, aged cheeses. ❖ You have **Genes for Pyruvate dehydrogenase deficiency-** Can cause disturbances in energy homeostasis and lead to diabetes. **Include thiamine rich foods like brown rice, legumes, whole grains.**
Lipid Metabolism	❖ **Medium chain Acyl coA dehydrogenase deficiency seen- Strictly avoid KETO diets. Avoid prolonged periods of fasting.** Fructose overload with processed drinks and artificially sweetened foods can cause malabsorption and change of the gut bacterial flora. This can lead to decreased immunity, allergies. ❖ You have **genes for 3 MCC deficiency- can cause hair loss and aging skin. Include biotin rich foods like soy bean, eggs.** ❖ You have mutations in genes for **Peroxisome Biogenesis (Zellweger), Phytanic acid Storage disorder- Can cause neuropathy, tingling, numbness, shooting pains. Include Fish Oil supplements.** ❖ **Genes for Carnitine Palmitoyltransferase Deficiency- Small frequent meals rich in complex carbohydrates. Avoid fasting, intensive workouts.**

NUTRITION RECOMMENDATIONS

a. Nutrigenomics	
Protein Metabolism	❖ You have **Genes for Maple syrup urine disease-** Avoid high protein meals/ powders. Increase intake of **thiamine rich foods, like whole wheat, unpolished rice, millets.** ❖ **Arginine- Glycine Amidinotransferase Deficiency, Muscle AMP deaminase deficiency, Arginase deficiency -**Lead to low muscle creatinine levels. Can lead to Myopathy, especially after heavy workouts. Please ensure to include foods like Pumpkin seeds, Walnuts, Peanuts, Almonds, Eggs, Buttermilk. ❖ You have genes for **Methionine Adenosyl transferase deficiency- Can lead to headaches, low mood, muscle aches. Increase consumption of Fruits.**
Vitamins and Minerals	❖ You have genes positive for hypophosphatasia- can cause bone pains, joint problems. Include phosphate rich foods like **sunflower seeds, pumpkin seeds, buttermilk, aged cheese, green leafy vegetables, beans.** ❖ **Mutations seen in anemia related genes (Megaloblastic)/** Methylmalonic acidemia with homocystinuria/ Methylmalonic acidemia/ Mutations in UMPS gene **- Can cause symptoms of tingling and numbness. Include dark green leafy vegetables, Vitamin B12 rich foods (Eggs, Fish, seafood).** ❖ **Riboflavin deficiency- Can predispose to migraine like headaches. Recommend riboflavin supplementation and foods rich in riboflavin like eggs, Dairy, green leafy vegetables.** ❖ **TF mutations, causes dysregulation of iron uptake- can cause iron deficiency anemia. Include foods which improve iron stores like dates, legumes, dark green vegetables.**

NUTRITION RECOMMENDATIONS

b. Macronutrient Distribution	• Carbohydrates (Complex only) - 40 - 50% • Fats - 10 - 20% • Proteins - 30 - 40%



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NUTRITION RECOMMENDATIONS

c. Changes You Need to Make In Each Food Group

Must Include - Whole grains, Green leafy vegetables, Legumes, Buttermilk

1. Carbohydrates	Grains which can be included in diet- Include Thiamine rich foods like **Hand pounded rice, Brown Rice, Whole wheat flour, Millets (any kind), Quinoa.** • **Hand pounded rice, basmati rice, whole wheat. 6 - 7 days/week.** • **Millets - 4 - 5 days/week.**	
2. Fats	• Indian cooking- Use cold pressed **Peanut oil, Sesame oil, Ghee.** • Salads and stir fry **- Extra Virgin Olive Oil.**	
3. Proteins	• **Legumes** - Any variety. **5 - 6 days/week.** • **Soy bean, Rajma, black eyed peas - 1 day/week.** • **Green moong dal sprouts - Once a week.**	
4. Vegetables	• **Include all varieties of vegetables. 4 days/week.** • **Prefer - Beans, carrots, beetroot, Gourds.** • **Dark green leafy vegetables like Spinach, Mustard greens. 5 days/week.** • **Avoid monotonous meals.**	

5. Dairy	• **Prefer buttermilk - 1 cup daily. 6 - 7 days/week.** • **Milk based beverages (Tea, Coffee) - not more than 2 cups a day.**	
6. Fruits	• Include all seasonal fruits. **5 days/week.** • **Avoid fruit juices, instead eat the whole fruit.**	
7. Spices	• **Reduce salt and chili powder.** • **Rest of the spices okay.**	
8. Nuts	• **Include chia, flaxseed powder, sunflower seeds, almonds, walnuts. 5 days/week.** • **Only take one type of nuts/ day** About 50 gm/ day.	
9. Beverages	• Prefer Green Tea. • Water intake - 1.5 to 2 liter/day.	
OTHER NUTRITIONAL RECOMMENDATIONS	• **Strongly recommend avoiding outside food, especially fried foods**- Can cause inflammation. • **Recommend Vitamin E, B complex supplementation.**	

YOUR PLAN FOR NEXT 3 MONTHS

Included is a 3-month intense plan to reboot your system.

Goal- Maintain health.

Lifestyle

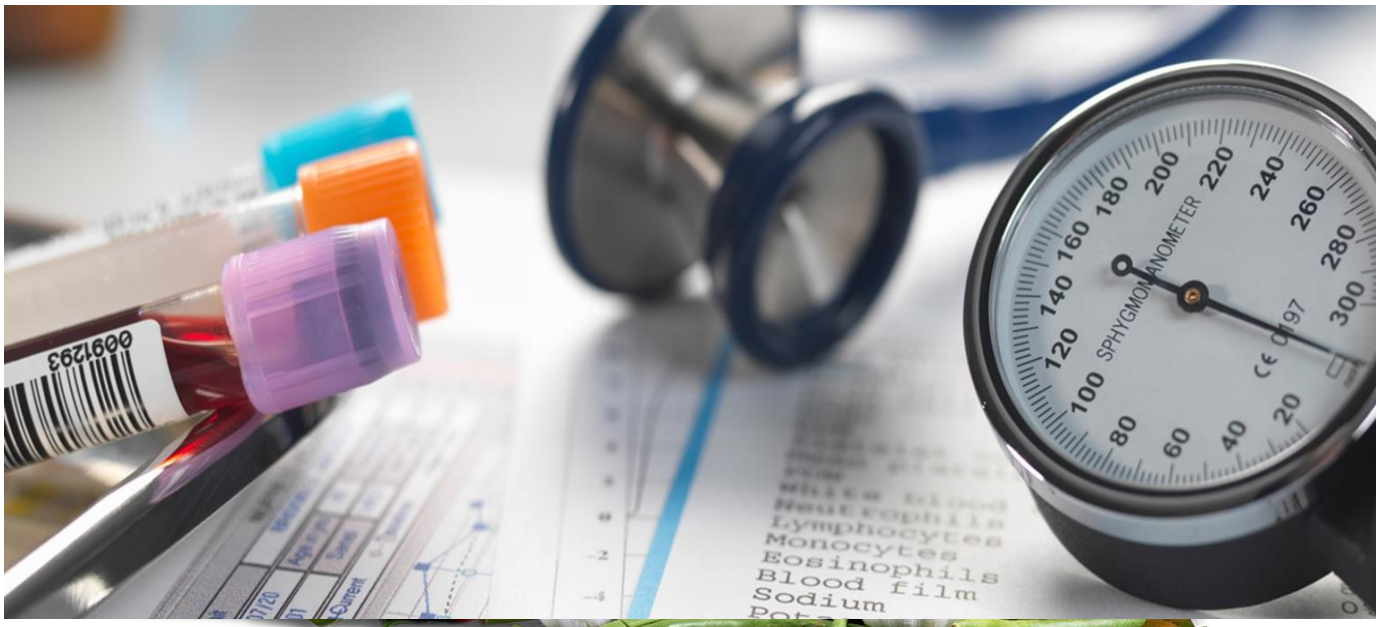
- ✓ Maintain regular sleep timings.
- ✓ **Include breathing exercises and meditation for at least 20 minutes each day.**
- ✓ **Include a 30 to 40-minute workout every day** without fail. Prefer brisk walking/ yoga.
- ✓ Include a Pre work out snack 45 to 60 minutes before work out. Make sure it is rich in complex carbohydrates. Ideas for snacks include a Mixed berries smoothie, idli with peanut chutney, muesli, Avocado toast, oatmeal, almonds, walnuts.

YOUR DIET

DO'S	DONT'S
✓ **Include foods rich in carotenoids like broccoli, bell peppers, carrots, beet roots, spinach.** ✓ **Include foods which improve colon health like buttermilk, beans, gourds (Ridge gourd, bottle gourd, bitter gourd) fermented foods (Idli, Bean sprouts), dark green vegetables.** ✓ **Increase intake of vegetable protein like legumes (6 to 7 days a week).** ✓ Include phosphate rich foods like **sunflower seeds, pumpkin seeds, buttermilk, green leafy vegetables, beans.** ✓ **Please try to follow the diet plan given in the report.**	☒ **Processed foods like chips, biscuits, cookies, fast food.** ☒ **Refined sugars, white rice, sugary drinks.** ☒ **Vegetable oils, Sunflower oil, Rice bran oil, Safflower oil.**

TESTS YOU NEED IN THE NEXT ONE YEAR

1. **Colonoscopy within next 1- 2 years.**
2. **PSA screening in a year.**
3. **Annual health checkup and blood draw next year.**



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YOUR WEEKLY DIET CHART

5 - 6 AM
Lukewarm water with lemon squeezed

8 - 9 AM
Korra biyyam Upma with veggies 1 cup 200 gm, Coffee 1 cup

1 - 2 PM
1 ½ Cups single polished/ Hand pounded rice, Mixed vegetable curry, Green leafy vegetable dal, Buttermilk 1 glass

5 - 6 PM
1 Cup Masala tea, 15 almonds

8 - 9 PM
1 Cup multigrain Khichdi with vegetables (200gm), 1 glass buttermilk

YOUR WEEKLY DIET CHART

5 - 6 AM

Lukewarm water with cinnamon powder

8 - 9 AM

Ragi Java 200 ml, Coffee 1 cup

1 - 2 PM

1 ½ Cups single polished/ Hand pounded rice, palak pappu, beerakaya kura, 1 glass buttermilk

5 - 6 PM

1 Cup green tea, 1 cup walnuts

8 - 9 PM

1 Bowl cracked wheat upma with onions, carrots, peas, beans, 1 glass buttermilk

YOUR WEEKLY DIET CHART

5 - 6 AM
Lukewarm water with lemon and ginger

8 - 9 AM
Cracked wheat upma with mixed vegetables, Coffee 1 cup

1 - 2 PM
1 ½ Cups single polished/ Hand pounded rice, Bhindi curry, Sambar, 1 glass buttermilk

5 - 6 PM
1 Cup green tea with lemon and honey, 1 cup makhana

8 - 9 PM
1 Bowl rolled rice pulihora, 1 glass buttermilk

YOUR WEEKLY DIET CHART

5 - 6 AM
Lukewarm water with lemon and honey

8 - 9 AM
Oats and spinach Pongal, Coffee 1 cup

1 - 2 PM
1 ½ Cups single polished/ Hand pounded rice, rasam, mixed vegetable curry, 1 glass buttermilk

5 - 6 PM
Smoothie with berries, apples, chia seeds

8 - 9 PM
2 Whole wheat parathas with palak saag, tadka dal, 1 glass buttermilk

YOUR WEEKLY DIET CHART

5 - 6 AM
Lukewarm water with fenugreek seed powder

8 - 9 AM
Idli (Brown rice and urad dal) 3, peanut chutney, Coffee 1 cup

1 - 2 PM
1 ½ Cups single polished/ Hand pounded rice, bachala aaku pappu, Beans and carrot curry, 1 glass buttermilk

5 - 6 PM
Smoothie with carrots, spinach, flax seed powder

8 - 9 PM
2 Bajra roti with rajma, 1 glass buttermilk

YOUR WEEKLY DIET CHART

5 - 6 AM

Lukewarm water with ginger and honey

8 - 9 AM

2 Pesarrattu with chutney, Coffee 1 cup

1 - 2 PM

1 ½ Cups single polished/ Hand pounded rice, Cabbage curry, Thotakura pappu, 1 glass buttermilk

5 - 6 PM

1 Cup cardamom tea, 1 granola bar

8 - 9 PM

3 Phulka with black chana curry, 1 glass buttermilk

YOUR WEEKLY DIET CHART

5 - 6 AM

Warm water with lemon and honey

8 - 9 AM

1 Uttapam with topping of carrots, bell peppers, cilantro, Coffee 1 cup

1 - 2 PM

1 ½ Cups single polished/ Hand pounded rice, Dodakaya curry, chukka kura pappu, 1 glass buttermilk

5 - 6 PM

1 Cup coffee

8 - 9 PM

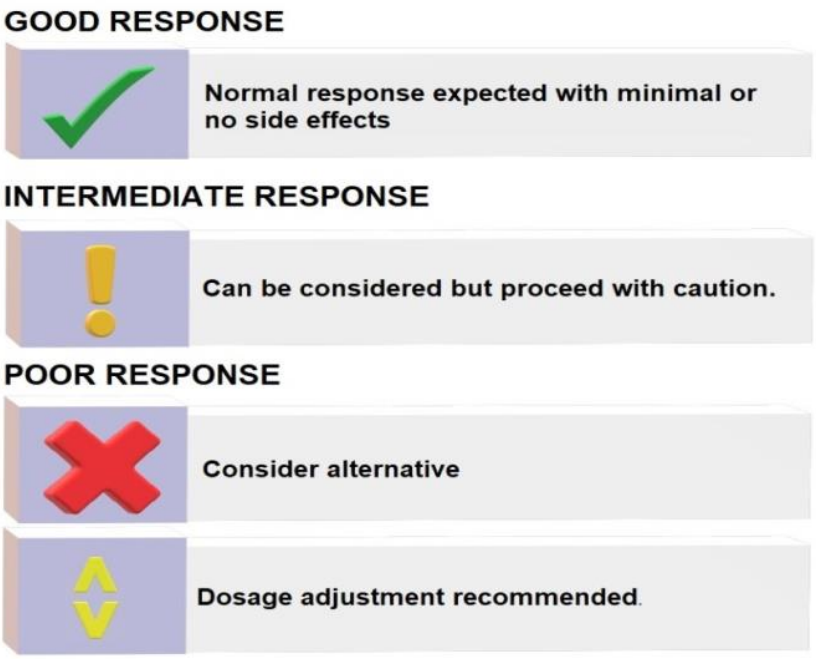
2 Jowar roti with mushroom curry, 1 glass buttermilk

PHARMACOGENOMICS REPORT

GenepoweRx™

PHARMACOGENOMICS

Pharmacogenetics report - FDA, CPIC & PharmGkb Approved Biomarker



PHARMACOGENOMIC ANALYSIS AND DRUG RESPONSE STATUS

(FDA, CPIC & PharmGkb Approved Biomarker evaluation)

1. G6PD STATUS

No risk of predisposition to G6PD deficiency.

2. RESPONSE TO ANTIPLATELET AGENTS

Good Response	Intermediate Response	Poor Response
Prasugrel	Aspirin	Clopidogrel, Aspirin+Clopidogrel

CPIC Guidelines for Antiplatelet therapy recommendations

(When considering clopidogrel for ACS patients undergoing PCI based on CYP2C19 status)

Phenotype	CYP2C19 poor metabolizer
Genotype	An individual carrying two no function alleles
Diplotype	*2/*2
Implications	Significantly reduced clopidogrel active metabolite formation; increased on-treatment platelet reactivity; increased risk for adverse cardiac and cerebrovascular events
Therapeutic recommendations	Avoid clopidogrel if possible. Use prasugrel or ticagrelor at standard dose if no contraindication.
Classification of Recommendations	Strong
Other recommendations	Alternative P2Y12 inhibitors not impacted by CYP2C19 genetic variants include ticagrelor and ticlopidine. Prasugrel is contraindicated in patients with a history of stroke or TIA/for neurovascular indications.

To note: *2, *3, *17 are considered due to strong scientific evidence. *4 to *8 alleles of CYP2C19 are not weighed.

3. RESPONSE TO ANTICOAGULANTS

Good Response	Intermediate Response	Poor Response
Rivaroxaban, Dabigatran	Warfarin	Phenprocoumon, Apixaban

4. RESPONSE TO ANTI - ARRHYTHMIC DRUGS

Good Response	Intermediate Response	Poor Response
Mexiletine, Quinidine, Disopyramide	--	Digoxin, Flecainide, Propafenone

5. RESPONSE TO ANTI - HYPERTENSIVE DRUGS

Molecule Class	Good Response	Intermediate Response	Poor Response	Evidence Not Found
Calcium Channel Blockers	Amlodipine, Nifedipine	Verapamil	--	Felodipine, Nitrendipine, Diltiazem
ARBs	Telmisartan, Losartan	--	Candesartan, Irbesartan	Olmesartan
Vasodilator Drugs	Regadenoson	--	--	Bepridil
Loop Diuretics	--	--	Torasemide, Bumetanide, Furosemide	--
Thiazide Diuretics	--	--	Chlorthalidone, Hydrochlorothiazide	Indapamide
Potassium Sparing Diuretics	Spironolactone, Amiloride	--	--	Triamterene, Eplerenone
ACE Inhibitors	Enalapril	Imidapril	Quinapril, Benazepril	Fosinopril, Ramipril
Beta Blockers	Bucindolol	Timolol	Atenolol, Propranolol, Metoprolol, Carvedilol	Esmolol, Pindolol, Nadolol

6. RESPONSE TO DIABETIC DRUGS

Molecule Class	Good Response	Intermediate Response	Poor Response	Evidence not found
Biguanides	Metformin	--	--	--
Sulfonylureas	Metformin+Glibenclamide	Gliclazides, Glibenclamide, Glimepiride, Glipizide, Gliquidone	--	Glyburide Chlorpropamide Tolazamide Tolbutamide
GLP-1 receptor agonists	--	--	--	Exenatide Liraglunatide Lixisenatide Dulagutide Albiglutide Semaglutide
Thiazolidinedione	--	Pioglitazone, Rosiglitazone	--	--
Glinides	--	Repaglinide	--	Nateglinide
SGLT-2 inhibitors	--	--	--	Canagliflozin Dapagliflozin Dapagliflozin Empagliflozin Ertugliflozin
DPP4 Inhibitors	Vildagliptin, Sitagliptin	--	--	Linagliptin Saxagliptin
Alpha - glucosidase inhibitors	--	--	--	Voglibose Acarbose Miglitol

7. RESPONSE TO HMG CoA REDUCTASE INHIBITORS (STATINS)

Good Response	Intermediate Response	Poor Response
Lovastatin, Rosuvastatin	Pitavastatin, Pravastatin, Simvastatin	Atorvastatin, Fluvastatin

CPIC Guideline - Recommended dosing of simvastatin based on SLCO1B1 phenotype.

Phenotype	Genotype	Diplotype	Implications For Simvastatin	Dosing Recommendations For Simvastatin	Classification Of Recommendations
Normal function	An individual carrying two normal function alleles or one normal plus one increased function allele	***1/*1**	Typical myopathy risk and statin exposure	Prescribe desired starting dose and adjust doses based on disease-specific guidelines.	Strong

8. RESPONSE TO ANTI - CHOLESTEROL MEDs OTHER THAN HMG CoA REDUCTASE INHIBITORS

Good Response	Intermediate Response	Poor Response
Fenofibrate	--	--

9. RESPONSE TO GASTRO INTESTINAL DRUGS (PROTON PUMP INHIBITORS

Good Response	Intermediate Response	Poor Response
Omeprazole, Pantoprazole, Rabeprazole, Lansoprazole, Esomeprazole	--	Corticosteroids (In crohn's disease)

10. RESPONSE TO ANTIEMETICS (NAUSEA AND VOMITING DRUGS)

Good Response	Intermediate Response	Poor Response
Palonosetron, Granisetron	--	Tropisetron, Ondansetron

11. RESPONSE TO PAINKILLERS (ANALGESIC, NSAIDs)

Good Response	Intermediate Response	Poor Response
Acetaminophen, Desmethyl Naproxen, Opioid Analgesic	Sulindac	Fentanyl

12. RESPONSE TO ASTHMA MEDICATIONS

Good Response	Intermediate Response	Poor Response
Aspirin (In Asthmatics), Glucocorticoids, Flunisolide	--	Methacholine, Montelukast, Tiotropium

13. RESPONSE TO ANTI - VIRALS

Good Response	Intermediate Response	Poor Response
--	--	Oseltamivir

14. RESPONSE TO ANTI - INFLAMMATORY DRUGS

Molecule Class	Good Response	Intermediate Response	Poor Response
Arthritis, Rheumatoid	Adalimumab, Etanercept (Arthritis), Tocilizumab, Infliximab	Rituximab	Methotrexate, Sulfasalazine, Leflunomide, Tumor necrosis factor alpha (Tnf-alpha) inhibitors (Arthritis)
Gout	Allopurinol	--	--
Inflammatory Bowel Diseases	Azathioprine, Tumor necrosis factor alpha (Tnf-alpha) inhibitors (IBD)	Adalimumab, Tacrolimus	Cyclosporine, Mercaptopurine, Thioguanine, Desloratadine+Mizolastine
Psoriasis	Ustekinumab, Dimethyl Fumarate	--	Adalimumab, Tumor necrosis factor alpha (Tnf-alpha) inhibitors (Psoriasis), Etanercept (Psoriasis)

15. RESPONSE TO ANTI - EPILEPTIC DRUGS (AEDs)

Good Response	Intermediate Response	Poor Response
Valproic acid	Phenytoin	--

16. RESPONSE TO HEPATITIS-C MEDICATIONS

Good Response	Intermediate Response	Poor Response
--	Peginterferon alfa-2b+Ribavirin, Sofosbuvir	Peginterferon alfa-2a+Peginterferon alfa-2b+Ribavirin, Ledipasvir+Sofosbuvir, Peginterferon alfa-2a+Peginterferon alfa-2b+Ribavirin+Telaprevir, Peginterferon alfa-2a+Peginterferon alfa-2b+Ribavirin+Simeprevir, Peginterferon alfa-2a, Peginterferon alfa-2b

17. RESPONSE TO OPIOIDS

Good Response	Intermediate Response	Poor Response
Sufentanil, Tramadol, Methadone, Tapentadol, O-desmethyltramadol, Buprenorphine	Alfentanil	Oxycodone, Butorphanol

18. RESPONSE TO ALZHEIMER's DRUGS

Good Response	Intermediate Response	Poor Response
Rivastigmine, Donepezil	--	Risperidone, Olanzapine

19. RESPONSE TO TRANSPLANTATION DRUGS

Good Response	Intermediate Response	Poor Response
--	--	Mycophenolate Mofetil, Cyclosporine, Sirolimus, Mycophenolic Acid, Tacrolimus

20. RESPONSE TO ANTIPSYCHOTIC DRUGS

Good Response	Intermediate Response	Poor Response
Olanzapine	Risperidone	Clozapine, Quetiapine

21. RESPONSE TO ANTIDEPRESSANTS

Good Response	Intermediate Response	Poor Response
Fluvoxamine, Selective serotonin reuptake inhibitors, Paroxetine, Desipramine	Nortriptyline, Morphine, Amitriptyline, Sertraline, Duloxetine	Mirtazapine, Venlafaxine, Escitalopram, Bupropion, Citalopram, Fluoxetine

To note: Response to the above drugs is to be correlated with the section on Side effects also.

METABOLISM STATUS

Increased Metabolism	Intermediate Metabolism	Decreased Metabolism
Thiazolidinediones Pioglitazone	**Antiplatelet Agents** Clopidogrel	**Thiazolidinediones** Rosiglitazone
Sulfonylureas Tolbutamide	**Antiarrhythmic Drugs** Propafenone	**Antiarrhythmic Drugs** Digoxin
Anticoagulants Warfarin	**Beta Blockers** Metoprolol	**Transplantation Drugs** Temsirolimus
Anti-Epileptic Drugs Phenytoin, Mephenytoin	**Calcium Channel Blockers** Nifedipine	**Antidepressants** Mirtazapine, Escitalopram, Sertraline
Beta Blockers Carvedilol	**Transplantation Drugs** Cyclosporine, Sirolimus	**Antipsychotic Drugs** Zuclopenthixol, Aripiprazole
ACE Inhibitors Enalapril	**Nausea and Vomiting drugs (Serotonin Receptor Antagonists)** Tropisetron	**HMG CoA reductase inhibitors (Statins)** Fluvastatin
Calcium Channel Blockers Verapamil, Amlodipine	**Antidepressants** Clomipramine, Venlafaxine, Amitriptyline, Doxepin, Citalopram, Imipramine	**GastroIntestinal Drugs (Proton Pump Inhibitors)** Rabeprazole, Esomeprazole, Dexlansoprazole
Angiotensin II Receptor Blockers (ARBs) Losartan, Irbesartan		
Vasodilator Drugs Cilostazol		
Opioids Methylphenobarbital		
Painkillers (Analgesics, NSAIDs) Diclofenac, Ibuprofen, Flurbiprofen, Meloxicam, Naproxen		

METABOLISM STATUS

Increased Metabolism	Intermediate Metabolism	Decreased Metabolism
Nausea and Vomiting drugs (Serotonin Receptor Antagonists) Ondansetron		
Antidepressants Nortriptyline, Fluvoxamine, Trimipramine, Bupropion, Ethylmorphine, Desipramine		
Antipsychotic Drugs Clozapine, Quetiapine, Risperidone		
HMG CoA reductase inhibitors (Statins) Lovastatin		
GastroIntestinal Drugs (Proton Pump Inhibitors) Omeprazole		
Cough Medicine Dihydrocodeine, Debrisoquine, Dextromethorphan, Sparteine, Bufuralol		

DOSAGE RECOMMENDATIONS

Increased Dosage	Intermediate Dosage	Decreased Dosage
Biguanides Metformin	**Antiplatelet Agents** Clopidogrel	**Anticoagulants** Warfarin, Acenocoumarol
Sulfonylureas Tolbutamide	**Anti-Epileptic Drugs** Lamotrigine, Carbamazepine	**Anti-Epileptic Drugs** Valproic acid
Antiplatelet Agents Ticagrelor	**Opioids** Sufentanil, Talinolol	**Beta Blockers** Metoprolol, Carvedilol
Anticoagulants Phenprocoumon, Apixaban	**Transplantation Drugs** Mycophenolic Acid	**Opioids** Methadone
Antiarrhythmic Drugs Flecainide	**Antidepressants** l-tryptophan	**Transplantation Drugs** Mycophenolate Mofetil, Cyclosporine+Mycophenolic Acid, Tacrolimus
Anti-Epileptic Drugs Mephenytoin	**HMG CoA reductase inhibitors (Statins)** Atorvastatin+Rifampin, Fluvastatin	**Nausea and Vomiting drugs (Serotonin Receptor Antagonists)** Granisetron
Angiotensin II Receptor Blockers (ARBs) Telmisartan, Irbesartan	**Cough Medicine** Codeine	**Antidepressants** Mirtazapine, Imipramine
Cephalosporins Cefotaxime		**Antipsychotic Drugs** Quetiapine
Opioids Alfentanil, Oxycodone, Phenytoin, Buprenorphine		**HMG CoA reductase inhibitors (Statins)** Pravastatin
Transplantation Drugs Cyclosporine, Sirolimus		**Hepatitis C** Peginterferon alfa-2b+Ribavirin
Painkillers (Analgesics, NSAIDs) Fentanyl, Ibuprofen		**Antibiotics** Cyclosporine+Dicloxacillin (In cystic fibrosis), Dicloxacillin

DOSAGE RECOMMENDATIONS

Increased Dosage	Intermediate Dosage	Decreased Dosage
Antidepressants Morphine, Amitriptyline, Sertraline, Doxepin, Citalopram		
Antipsychotic Drugs Olanzapine		
HMG CoA reductase inhibitors (Statins) Rosuvastatin, Atorvastatin, Pitavastatin, Simvastatin		
Arthritis, Rheumatoid Sulfasalazine		
Gout Allopurinol, Febuxostat		
Asthma drugs Terbutaline		
Cough Medicine Dextromethorphan, N-Desmethyltamoxifen, Bufuralol		

FREQUENT MEDICAL CHECKUP FOR WARFARIN

Molecules	% of studies_Checkup Required	% of studies_Checkup Not Required	Frequent Checkup Requirement
Anticoagulants			
Warfarin	50.0	50.0	**Frequent Check-up Required**

SIDE EFFECTS

To note: We recommend drugs listed as low side effect response (Low SE).
If you are on drugs listed as High SE (High side effect), consider an alternative.

Brief Report

Molecules	Side Effect Status	Likely Side effect
Antiplatelet Agents		
Prasugrel	Low SE	Risk of Bleeding
Clopidogrel	Intermediate SE	Neurological Events/ Hemorrhage/ In-Stent Thrombosis / Transient Ischemic Attack/Bleeding/Cardiovascular Events
Aspirin+Clopidogrel	Low SE	Cardiovascular Events (Cardiac Death and Recurrent Myocardial Infarction)
Aspirin	Low SE	Myocardial Infarction /Cardiovascular Events/ Peptic Ulcer Hemorrhage/ In-Stent Restenosis/ Chronic Urticaria /Asthma / Gastrointestinal Bleeding/ Risk of adverse events
Anticoagulants		
Warfarin	Low SE	Hemorrhage/ Over-Coagulation/ Bleeding
Acenocoumarol	Low SE	Hemorrhage/ Over-Coagulation/ Bleeding
Apixaban	Low SE	Increased clearance/ Bleeding
Antiarrhythmic Drugs		
Flecainide	Low SE	Increased clearance
Amiodarone	Low SE	Drug-Induced Torsades De Pointes or Drug-Induced Ventricular Arrhythmia and QT Prolongation
Anti-hypertensive Drugs		
Calcium Channel Blockers		
Verapamil	Low SE	Coronary Artery Disease / Hypertension / Nonfatal Myocardial Infarction / Nonfatal Stroke/ Cardiovascular Events/ Adverse Cardiovascular Outcomes/ Likelihood of Developing Diabetes Mellitus and QT Prolongation

Angiotensin II Receptor Blockers (ARBs)		
Irbesartan	Low SE	Increased clearance
Beta Blockers		
Atenolol	Low SE	Hypercholesteremia / Hyperglycemia / Adverse Cardiovascular Outcomes / Uncontrolled Blood Pressure / Hypertriglyceridemia / Likelihood of Developing Diabetes Mellitus
Diabetes Drugs		
Biguanides		
Metformin	Low SE	Gastrointestinal Side Effects / Increased clearance
Sulfonylureas		
Tolbutamide	Low SE	Increased clearance
HMG CoA reductase inhibitors (Statins)		
Rosuvastatin	Intermediate SE	Myalgia/ Myopathy/ Cardiovascular Disease
Atorvastatin	**High SE**	Myalgia/ Myopathy/ Cardiovascular Disease
Pravastatin	Intermediate SE	Myalgia/ Myopathy/ Cardiovascular Disease
Simvastatin	Low SE	Myalgia/ Myopathy/ Cardiovascular Disease
Nausea and Vomiting drugs (Serotonin Receptor Antagonists)		
Ondansetron	Intermediate SE	Nausea and Vomiting
Painkillers (Analgesics, NSAIDs)		
Celecoxib	Low SE	Risk of Gastrointestinal Toxicities / Cardiovascular Toxicity / Adenoma
Acetaminophen	**High SE**	Liver Failure / Stevens-Johnson Syndrome and Toxic Epidermal Necrolysis with Severe Ocular Involvements / Urticaria and Angioedema
Fentanyl	Low SE	Cognitive Dysfunction / Vomiting / Somnolence /Respiratory Depression / Severity of Hypotension / Constipation

Diclofenac	**High SE**	Gastrointestinal Bleeding/ Urticaria and Angioedema
Buprenorphine (with optional Fentanyl and Tramadol)	Low SE	Sexual Dysfunction or Reproductive System Disorders/ skin redness
Asthma drugs		
Aspirin (In Asthmatics)	Low SE	Aspirin Induced Asthma/ chronic urticaria
Cough Medicine		
Codeine	Intermediate SE	Increased clearance/Risk of developing opioid dependence
Dextromethorphan	Low SE	Increased clearance
N-Desmethyltamoxifen	Low SE	Increased clearance
Bufuralol	Low SE	Increased clearance
Antibiotics		
Streptomycin	Low SE	Hearing Loss
Anti-Inflammatory Drugs		
Arthritis, Rheumatoid		
Methotrexate	Low SE	adverse events
Sulfasalazine	Low SE	Increased clearance
Anti-Epileptic Drugs		
Valproic acid	**High SE**	Increased LDL Cholesterol Concentrations/ Elevations of Fasting Glucose Concentrations/ Drug-Resistance/ Hepatotoxicity/ Weight Gain/ Bone Density
Mephenytoin	Low SE	Increased clearance
Opioids		
Methadone	Low SE	Skin irritation/severe side effects/severity of opiate withdrawal symptoms
Opioids (In general)	Intermediate SE	Opioid dependence
Volatile anesthetics		

Volatile anesthetics with or without Succinylcholine	Low SE	Malignant hyperthermia
Desflurane	Low SE	Malignant hyperthermia
Enflurane	Low SE	Malignant hyperthermia
Succinylcholine	Low SE	Malignant hyperthermia
Transplantation Drugs		
Mycophenolate Mofetil	Low SE	Acute kidney transplant rejection/adverse drug reactions/drug-induced toxicity /Leukopenia
Cyclosporine	Intermediate SE	Neurotoxicity, new-onset diabetes after transplantation (NODAT)
Cyclophosphamide	**High SE**	Oral mucositis/hemorrhagic cystitis
Valganciclovir	Low SE	Neutropenia
Mycophenolic Acid	**High SE**	Chronic lung allograft dysfunction (CLAD)/transplant rejection
Cyclosporine+Mycophenolate Mofetil	**High SE**	Biopsy-proven acute rejection
Tacrolimus	Low SE	New-onset diabetes mellitus (NODM)/nausea and/or vomiting/ allograft loss/ acute renal toxicity
Antipsychotic Drugs		
Lithium	**High SE**	Sleep Disturbances/ Suicidal Ideation
Olanzapine	**High SE**	Fatigue/ Weight Gain and Hypertriglyceridemia/ Obesity/ susceptibility to metabolic syndrome
Paliperidone	Low SE	Increased LDL Cholesterol Concentrations/ Elevations of Fasting Glucose Concentrations/ Weight Gain and Hypertriglyceridemia
Clozapine	**High SE**	Neutropenia/ Hyperprolactinemia and Weight Gain/ Increased LDL Cholesterol Concentrations/ Tardive Dyskinesia/ susceptibility to metabolic syndrome/ risk of agranulocytosis

Quetiapine	Low SE	Increased LDL Cholesterol Concentrations/ Elevations of Fasting Glucose Concentrations/ Weight Gain And Hypertriglyceridemia/ Neurological Adverse Reactions and Sleepiness
Haloperidol	Intermediate SE	Weight Gain and Hypertriglyceridemia/ constipation/ dystonia/ extrapyramidal symptoms/ galactorrhea/psychomotor agitation
Risperidone	**High SE**	Increased LDL Cholesterol Concentrations/ susceptibility to metabolic syndrome/ Induced Weight gain/ Elevations of Fasting Glucose Concentrations/ Hypertriglyceridemia/ Hyperprolactinemia/ Adverse Reactions- Cardiovascular events
Antidepressants		
Clomipramine	**High SE**	Suicide Ideation
Nefazodone	**High SE**	Suicide Ideation
Venlafaxine	**High SE**	Suicide Ideation, Agitation And Dysphoria
Paroxetine	**High SE**	Suicide Ideation, Adverse Drug Reactions, Sexual Dysfunction
Citalopram	**High SE**	Heart Palpitations/ Sexual Dysfunction/ Suicide Ideation

Detailed reports of the above data and other combination drugs are reported below.

DETAILED REPORTS

Note: A small value for Chi square (Strength of the study) indicates a high correlation between Good and Poor response studies. Hence, drug molecules which have *P*≤0.5 or small Chi-square values are to be considered while drug decision making.

RESPONSE TO ANTIPLATELET AGENTS

No of variants analyzed: 64
No of gene markers evaluated: 40
Data validated on: 333935 individuals
No of studies evaluated /Supportive evidences (Publications): 358

Drug Molecule	% GOOD response studies	% POOR response studies	Response status	Chi square value	*P* value
Prasugrel	100.0	0.0	Good	100.0	0.0
Clopidogrel	37.5	62.5	Poor	6.25	0.01
Aspirin+Clopidogrel	25.0	75.0	Poor	25.0	0.0
Aspirin	50.0	50.0	Intermediate	0.0	1.0

RESPONSE TO ANTICOAGULANTS

No of variants analyzed: 77
No of gene markers evaluated: 34
Data validated on: 107057 individuals
No of studies evaluated /Supportive evidences (Publications): 223

Drug Molecule	% GOOD response studies	% POOR response studies	Response status	Chi square value	*P* value
Phenprocoumon	0.0	100.0	Poor	100.0	0.0
Rivaroxaban	100.0	0.0	Good	100.0	0.0
Warfarin	50.0	50.0	Intermediate	0.0	1.0
Dabigatran	66.67	33.33	Good	11.11	0.0
Apixaban	0.0	100.0	Poor	100.0	0.0

RESPONSE TO ANTIARRHYTHMIC DRUGS

No of variants analyzed: 14
No of gene markers evaluated: 6
Data validated on: 668 individuals
No of studies evaluated /Supportive evidences (Publications): 15

Drug Molecule	% GOOD response studies	% POOR response studies	Response status	Chi square value	*P* value
Digoxin	0.0	100.0	Poor	100.0	0.0
Flecainide	0.0	100.0	Poor	100.0	0.0
Mexiletine	100.0	0.0	Good	100.0	0.0
Quinidine	100.0	0.0	Good	100.0	0.0
Propafenone	0.0	100.0	Poor	100.0	0.0
Disopyramide	100.0	0.0	Good	100.0	0.0

RESPONSE TO ANTI - HYPERTENSIVE DRUGS

No of variants analyzed: 151
No of gene markers evaluated: 96
Data validated on: 256237 individuals
No of studies evaluated /Supportive evidences (Publications): 243

Drug Molecule	% GOOD response studies	% POOR response studies	Response status	Chi square value	*P* value
Calcium Channel Blockers					
Verapamil	50.0	50.0	Intermediate	0.0	1.0
Amlodipine	100.0	0.0	Good	100.0	0.0
Nifedipine	66.67	33.33	Good	11.11	0.0
Vasodilator Drugs					
Regadenoson	100.0	0.0	Good	100.0	0.0
Angiotensin II Receptor Blockers (ARBs)					
Telmisartan	100.0	0.0	Good	100.0	0.0
Losartan	66.67	33.33	Good	11.11	0.0
Candesartan	33.33	66.67	Poor	11.11	0.0
Irbesartan	42.86	57.14	Poor	2.04	0.15
Loop Diuretics					
Torasemide	0.0	100.0	Poor	100.0	0.0
Bumetanide	0.0	100.0	Poor	100.0	0.0
Furosemide	0.0	100.0	Poor	100.0	0.0
Thiazide Diuretics					
Chlorthalidone	0.0	100.0	Poor	100.0	0.0
Hydrochlorothiazide	42.86	57.14	Poor	2.04	0.15
Potassium Sparing Diuretics					

K&H Personalized Medicine

Spironolactone	100.0	0.0	Good	100.0	0.0
Amiloride	100.0	0.0	Good	100.0	0.0
ACE Inhibitors					
Quinapril	0.0	100.0	Poor	100.0	0.0
Benazepril	20.0	80.0	Poor	36.0	0.0
Imidapril	50.0	50.0	Intermediate	0.0	1.0
Enalapril	75.0	25.0	Good	25.0	0.0
Beta Blockers					
Bucindolol	100.0	0.0	Good	100.0	0.0
Timolol	50.0	50.0	Intermediate	0.0	1.0
Atenolol	37.5	62.5	Poor	6.25	0.01
Propranolol	0.0	100.0	Poor	100.0	0.0
Metoprolol	42.86	57.14	Poor	2.04	0.15
Carvedilol	0.0	100.0	Poor	100.0	0.0

RESPONSE TO DIABETIC DRUGS

No of variants analyzed: 60
No of gene markers evaluated: 37
Data validated on: 39284 individuals
No of studies evaluated /Supportive evidences (Publications): 89

Drug Molecule	% GOOD response studies	% POOR response studies	Response status	Chi square value	*P* value
Biguanides					
Metformin	80.0	20.0	Good	36.0	0.0
Sulfonylureas					
Gliclazides, Glibenclamide, Glimepiride, Glipizide, Gliquidone	50.0	50.0	Intermediate	0.0	1.0
Metformin+Glibenclamide	100.0	0.0	Good	100.0	0.0
Thiazolidinediones					
Pioglitazone	50.0	50.0	Intermediate	0.0	1.0
Rosiglitazone	50.0	50.0	Intermediate	0.0	1.0
Glinides					
Repaglinide	50.0	50.0	Intermediate	0.0	1.0
DPP4 Inhibitors					
Vildagliptin	100.0	0.0	Good	100.0	0.0
Sitagliptin	100.0	0.0	Good	100.0	0.0

RESPONSE TO HMG CoA REDUCTASE INHIBITORS (STATINS)

No of variants analyzed: 77
No of gene markers evaluated: 48
Data validated on: 334903 individuals
No of studies evaluated /Supportive evidences (Publications): 227

Drug Molecule	% GOOD response studies	% POOR response studies	Response status	Chi square value	*P* value
Lovastatin	100.0	0.0	Good	100.0	0.0
Rosuvastatin	55.56	44.44	Good	1.24	0.27
Atorvastatin	33.33	66.67	Poor	11.11	0.0
Pitavastatin	50.0	50.0	Intermediate	0.0	1.0
Pravastatin	50.0	50.0	Intermediate	0.0	1.0
Simvastatin	52.94	47.06	Intermediate	0.35	0.56
Fluvastatin	12.5	87.5	Poor	56.25	0.0

RESPONSE TO ANTI - CHOLESTEROL MEDs OTHER THAN HMG CoA REDUCTASE INHIBITORS

No of variants analyzed: 16
No of gene markers evaluated: 10
Data validated on: 8509 individuals
No of studies evaluated /Supportive evidences (Publications): 17

Drug Molecule	% GOOD response studies	% POOR response studies	Response status	Chi square value	*P* value
Fenofibrate	57.14	42.86	Good	2.04	0.15

RESPONSE TO GASTRO INTESTINAL DRUGS (PROTON PUMP INHIBITORS)

No of variants analyzed: 5
No of gene markers evaluated: 3
Data validated on: 3232 individuals
No of studies evaluated /Supportive evidences (Publications): 10

Drug Molecule	% GOOD response studies	% POOR response studies	Response status	Chi square value	*P* value
Omeprazole	100.0	0.0	Good	100.0	0.0
Pantoprazole	100.0	0.0	Good	100.0	0.0
Rabeprazole	100.0	0.0	Good	100.0	0.0
Lansoprazole	100.0	0.0	Good	100.0	0.0
Corticosteroids (In crohn's disease)	0.0	100.0	Poor	100.0	0.0
Esomeprazole	100.0	0.0	Good	100.0	0.0

RESPONSE TO ANTIEMETICS (NAUSEA AND VOMITING DRUGS)

No of variants analyzed: 6
No of gene markers evaluated: 5
Data validated on: 576 individuals
No of studies evaluated /Supportive evidences (Publications): 10

Drug Molecule	% GOOD response studies	% POOR response studies	Response status	Chi square value	*P* value
Palonosetron	100.0	0.0	Good	100.0	0.0
Tropisetron	0.0	100.0	Poor	100.0	0.0
Ondansetron	0.0	100.0	Poor	100.0	0.0
Granisetron	100.0	0.0	Good	100.0	0.0

RESPONSE TO PAINKILLERS (ANALGESIC, NSAIDs)

No of variants analyzed: 61
No of gene markers evaluated: 33
Data validated on: 10676 individuals
No of studies evaluated /Supportive evidences (Publications): 77

Drug Molecule	% GOOD response studies	% POOR response studies	Response status	Chi square value	*P* value
Acetaminophen	75.0	25.0	Good	25.0	0.0
Fentanyl	42.86	57.14	Poor	2.04	0.15
Sulindac	50.0	50.0	Intermediate	0.0	1.0
Desmethyl Naproxen	77.78	22.22	Good	30.86	0.0
Opioid Analgesic	100.0	0.0	Good	100.0	0.0

RESPONSE TO ASTHMA MEDICATIONS

No of variants analyzed: 28
No of gene markers evaluated: 26
Data validated on: 792 individuals
No of studies evaluated /Supportive evidences (Publications): 3

Drug Molecule	% GOOD response studies	% POOR response studies	Response status	Chi square value	*P* value
Aspirin (In Asthmatics)	100.0	0.0	Good	100.0	0.0
Methacholine	0.0	100.0	Poor	100.0	0.0
Glucocorticoids	100.0	0.0	Good	100.0	0.0
Flunisolide	100.0	0.0	Good	100.0	0.0
Montelukast	0.0	100.0	Poor	100.0	0.0
Tiotropium	0.0	100.0	Poor	100.0	0.0

RESPONSE TO ANTI - VIRALS

No of variants analyzed: 1
No of gene markers evaluated: 1
Data validated on: 20 individuals
No of studies evaluated /Supportive evidences (Publications): 1

Drug Molecule	% GOOD response studies	% POOR response studies	Response status	Chi square value	*P* value
Oseltamivir	0.0	100.0	Poor	100.0	0.0

RESPONSE TO ANTI - INFLAMMATORY DRUGS

No of variants analyzed: 137
No of gene markers evaluated: 90
Data validated on: 76247 individuals
No of studies evaluated /Supportive evidences (Publications): 47

Drug Molecule	% GOOD response studies	% POOR response studies	Response status	Chi square value	*P* value
Arthritis, Rheumatoid					
Adalimumab	100.0	0.0	Good	100.0	0.0
Methotrexate	33.33	66.67	Poor	11.11	0.0
Rituximab	50.0	50.0	Intermediate	0.0	1.0
Sulfasalazine	0.0	100.0	Poor	100.0	0.0
Etanercept (Arthritis)	66.67	33.33	Good	11.11	0.0
Tocilizumab	100.0	0.0	Good	100.0	0.0
Leflunomide	0.0	100.0	Poor	100.0	0.0
Tumor necrosis factor alpha (Tnf-alpha) inhibitors (Arthritis)	40.0	60.0	Poor	4.0	0.05
Infliximab	100.0	0.0	Good	100.0	0.0
Gout					

Allopurinol	100.0	0.0	Good	100.0	0.0
Inflammatory Bowel Diseases					
Cyclosporine	0.0	100.0	Poor	100.0	0.0
Adalimumab	50.0	50.0	Intermediate	0.0	1.0
Mercaptopurine	0.0	100.0	Poor	100.0	0.0
Thioguanine	0.0	100.0	Poor	100.0	0.0
Azathioprine	100.0	0.0	Good	100.0	0.0
Desloratadine+Mizolastine	0.0	100.0	Poor	100.0	0.0
Tumor necrosis factor alpha (Tnf-alpha) inhibitors (IBD)	100.0	0.0	Good	100.0	0.0
Tacrolimus	50.0	50.0	Intermediate	0.0	1.0
Psoriasis					
Adalimumab	0.0	100.0	Poor	100.0	0.0
Tumor necrosis factor alpha (Tnf-alpha) inhibitors (Psoriasis)	0.0	100.0	Poor	100.0	0.0
Ustekinumab	66.67	33.33	Good	11.11	0.0
Dimethyl Fumarate	100.0	0.0	Good	100.0	0.0
Etanercept (Psoriasis)	0.0	100.0	Poor	100.0	0.0

RESPONSE TO ANTI - EPILEPTIC DRUGS (AEDs)

No of variants analyzed: 20
No of gene markers evaluated: 11
Data validated on: 8702 individuals
No of studies evaluated /Supportive evidences (Publications): 43

Drug Molecule	% GOOD response studies	% POOR response studies	Response status	Chi square value	*P* value
Valproic acid	100.0	0.0	Good	100.0	0.0
Phenytoin	50.0	50.0	Intermediate	0.0	1.0

RESPONSE TO HEPATITIS-C MEDICATIONS

No of variants analyzed: 22
No of gene markers evaluated: 37
Data validated on: 33817 individuals
No of studies evaluated /Supportive evidences (Publications): 114

Drug Molecule	% GOOD response studies	% POOR response studies	Response status	Chi square value	*P* value
Peginterferon alfa-2a+Peginterferon alfa-2b+Ribavirin	40.0	60.0	Poor	4.0	0.05
Ledipasvir+Sofosbuvir	0.0	100.0	Poor	100.0	0.0
Peginterferon alfa-2a+Peginterferon alfa-2b+Ribavirin+Telaprevir	0.0	100.0	Poor	100.0	0.0
Peginterferon alfa-2b+Ribavirin	50.0	50.0	Intermediate	0.0	1.0
Peginterferon alfa-2a+Peginterferon alfa-2b+Ribavirin+Simeprevir	0.0	100.0	Poor	100.0	0.0
Sofosbuvir	50.0	50.0	Intermediate	0.0	1.0
Peginterferon alfa-2a	0.0	100.0	Poor	100.0	0.0
Peginterferon alfa-2b	0.0	100.0	Poor	100.0	0.0

RESPONSE TO OPIOIDS

No of variants analyzed: 80
No of gene markers evaluated: 37
Data validated on: 149286 individuals
No of studies evaluated /Supportive evidences (Publications): 156

Drug Molecule	% GOOD response studies	% POOR response studies	Response status	Chi square value	*P* value
Alfentanil	50.0	50.0	Intermediate	0.0	1.0
Sufentanil	66.67	33.33	Good	11.11	0.0
Tramadol	60.0	40.0	Good	4.0	0.05
Methadone	71.43	28.57	Good	18.37	0.0
Tapentadol	70.59	29.41	Good	16.95	0.0
Oxycodone	33.33	66.67	Poor	11.11	0.0
O-desmethyltramadol	60.0	40.0	Good	4.0	0.05
Buprenorphine	100.0	0.0	Good	100.0	0.0
Butorphanol	0.0	100.0	Poor	100.0	0.0

RESPONSE TO ALZHEIMER's DRUGS

No of variants analyzed: 6
No of gene markers evaluated: 5
Data validated on: 2907 individuals
No of studies evaluated /Supportive evidences (Publications): 19

Drug Molecule	% GOOD response studies	% POOR response studies	Response status	Chi square value	*P* value
Rivastigmine	100.0	0.0	Good	100.0	0.0
Donepezil	100.0	0.0	Good	100.0	0.0
Risperidone	0.0	100.0	Poor	100.0	0.0
Olanzapine	0.0	100.0	Poor	100.0	0.0

RESPONSE TO TRANSPLANTATION DRUGS

No of variants analyzed: 57
No of gene markers evaluated: 38
Data validated on: 21540 individuals
No of studies evaluated /Supportive evidences (Publications): 68

Drug Molecule	% GOOD response studies	% POOR response studies	Response status	Chi square value	*P* value
Mycophenolate Mofetil	0.0	100.0	Poor	100.0	0.0
Cyclosporine	0.0	100.0	Poor	100.0	0.0
Sirolimus	33.33	66.67	Poor	11.11	0.0
Mycophenolic Acid	0.0	100.0	Poor	100.0	0.0
Tacrolimus	14.29	85.71	Poor	51.02	0.0

RESPONSE TO ANTIPSYCHOTIC DRUGS

Drug Molecule	% GOOD response studies	% POOR response studies	Response status	Chi square value	*P* value
Olanzapine	70.0	30.0	Good	16.0	0.0
Clozapine	0.0	100.0	Poor	100.0	0.0
Quetiapine	0.0	100.0	Poor	100.0	0.0
Risperidone	46.15	53.85	Intermediate	0.59	0.44

RESPONSE TO ANTIDEPRESSANTS

Drug Molecule	% GOOD response studies	% POOR response studies	Response status	Chi square value	*P* value
Mirtazapine	0.0	100.0	Poor	100.0	0.0
Nortriptyline	50.0	50.0	Intermediate	0.0	1.0
Fluvoxamine	100.0	0.0	Good	100.0	0.0
Venlafaxine	37.5	62.5	Poor	6.25	0.01
Morphine	45.45	54.55	Intermediate	0.83	0.36
Selective serotonin reuptake inhibitors	100.0	0.0	Good	100.0	0.0
Escitalopram	40.0	60.0	Poor	4.0	0.05
Amitriptyline	50.0	50.0	Intermediate	0.0	1.0
Sertraline	50.0	50.0	Intermediate	0.0	1.0
Paroxetine	62.5	37.5	Good	6.25	0.01
Bupropion	40.0	60.0	Poor	4.0	0.05
Citalopram	40.0	60.0	Poor	4.0	0.05
Desipramine	66.67	33.33	Good	11.11	0.0
Fluoxetine	0.0	100.0	Poor	100.0	0.0
Duloxetine	50.0	50.0	Intermediate	0.0	1.0

METABOLISM STUDIES

Drug Molecule	% Decreased Metabolism studies	% Increased Metabolism studies	% of Intermediate Metabolism studies	Metabolism status
Pioglitazone	0.0	100.0	0.0	Increased Metabolism
Rosiglitazone	100.0	0.0	0.0	Decreased Metabolism
Tolbutamide	0.0	100.0	0.0	Increased Metabolism
Clopidogrel	50.0	50.0	0.0	Intermediate Metabolism
Warfarin	0.0	100.0	0.0	Increased Metabolism
Digoxin	100.0	0.0	0.0	Decreased Metabolism
Propafenone	0.0	0.0	100.0	Intermediate Metabolism
Phenytoin	0.0	100.0	0.0	Increased Metabolism
Mephenytoin	33.33	66.67	0.0	Increased Metabolism
Metoprolol	50.0	50.0	0.0	Intermediate Metabolism
Carvedilol	0.0	100.0	0.0	Increased Metabolism
Enalapril	0.0	100.0	0.0	Increased Metabolism
Verapamil	0.0	100.0	0.0	Increased Metabolism
Amlodipine	0.0	100.0	0.0	Increased Metabolism
Nifedipine	0.0	0.0	100.0	Intermediate Metabolism
Losartan	0.0	100.0	0.0	Increased Metabolism
Irbesartan	0.0	100.0	0.0	Increased Metabolism
Cilostazol	0.0	100.0	0.0	Increased Metabolism
Methylphenobarbital	0.0	100.0	0.0	Increased Metabolism
Cyclosporine	50.0	50.0	0.0	Intermediate Metabolism
Sirolimus	50.0	50.0	0.0	Intermediate Metabolism

Temsirolimus	100.0	0.0	0.0	Decreased Metabolism
Diclofenac	0.0	100.0	0.0	Increased Metabolism
Ibuprofen	0.0	100.0	0.0	Increased Metabolism
Flurbiprofen	0.0	100.0	0.0	Increased Metabolism
Meloxicam	0.0	100.0	0.0	Increased Metabolism
Naproxen	0.0	100.0	0.0	Increased Metabolism
Tropisetron	0.0	0.0	100.0	Intermediate Metabolism
Ondansetron	0.0	100.0	0.0	Increased Metabolism
Clomipramine	50.0	50.0	0.0	Intermediate Metabolism
Mirtazapine	100.0	0.0	0.0	Decreased Metabolism
Nortriptyline	0.0	100.0	0.0	Increased Metabolism
Fluvoxamine	0.0	100.0	0.0	Increased Metabolism
Venlafaxine	50.0	50.0	0.0	Intermediate Metabolism
Trimipramine	33.33	66.67	0.0	Increased Metabolism
Escitalopram	100.0	0.0	0.0	Decreased Metabolism
Amitriptyline	50.0	50.0	0.0	Intermediate Metabolism
Sertraline	100.0	0.0	0.0	Decreased Metabolism
Doxepin	50.0	50.0	0.0	Intermediate Metabolism
Bupropion	33.33	66.67	0.0	Increased Metabolism
Ethylmorphine	0.0	100.0	0.0	Increased Metabolism
Citalopram	50.0	50.0	0.0	Intermediate Metabolism

Desipramine	0.0	100.0	0.0	Increased Metabolism
Imipramine	50.0	50.0	0.0	Intermediate Metabolism
Zuclopenthixol	100.0	0.0	0.0	Decreased Metabolism
Aripiprazole	100.0	0.0	0.0	Decreased Metabolism
Clozapine	0.0	100.0	0.0	Increased Metabolism
Quetiapine	0.0	100.0	0.0	Increased Metabolism
Risperidone	0.0	100.0	0.0	Increased Metabolism
Lovastatin	0.0	100.0	0.0	Increased Metabolism
Fluvastatin	100.0	0.0	0.0	Decreased Metabolism
Omeprazole	0.0	100.0	0.0	Increased Metabolism
Rabeprazole	100.0	0.0	0.0	Decreased Metabolism
Esomeprazole	100.0	0.0	0.0	Decreased Metabolism
Dexlansoprazole	100.0	0.0	0.0	Decreased Metabolism
Dihydrocodeine	0.0	100.0	0.0	Increased Metabolism
Debrisoquine	0.0	100.0	0.0	Increased Metabolism
Dextromethorphan	0.0	100.0	0.0	Increased Metabolism
Sparteine	0.0	100.0	0.0	Increased Metabolism
Bufuralol	0.0	100.0	0.0	Increased Metabolism

DOSAGE RECOMMENDATIONS

Drug Molecule	% Low Dose response studies	% High Dose response studies	% Of Intermediate Dose response Studies	Dosage Recommendation
Metformin	33.33	66.67	0.0	Increased Dose
Tolbutamide	0.0	100.0	0.0	Increased Dose
Ticagrelor	0.0	100.0	0.0	Increased Dose
Clopidogrel	50.0	50.0	0.0	Intermediate Dose
Phenprocoumon	0.0	83.33	33.33	Increased Dose
Warfarin	64.29	35.71	4.76	Decreased Dose
Acenocoumarol	56.25	43.75	12.5	Decreased Dose
Apixaban	0.0	100.0	0.0	Increased Dose
Flecainide	0.0	100.0	0.0	Increased Dose
Lamotrigine	50.0	50.0	0.0	Intermediate Dose
Valproic acid	90.0	10.0	0.0	Decreased Dose
Carbamazepine	0.0	0.0	100.0	Intermediate Dose
Mephenytoin	14.29	85.71	0.0	Increased Dose
Metoprolol	100.0	0.0	0.0	Decreased Dose
Carvedilol	83.33	0.0	33.33	Decreased Dose
Telmisartan	0.0	100.0	0.0	Increased Dose
Irbesartan	0.0	100.0	0.0	Increased Dose
Cefotaxime	0.0	100.0	0.0	Increased Dose
Alfentanil	0.0	100.0	0.0	Increased Dose

Sufentanil	50.0	50.0	0.0	Intermediate Dose
Methadone	75.0	0.0	50.0	Decreased Dose
Talinolol	50.0	50.0	0.0	Intermediate Dose
Oxycodone	0.0	100.0	0.0	Increased Dose
Phenytoin	0.0	100.0	0.0	Increased Dose
Buprenorphine	0.0	100.0	0.0	Increased Dose
Mycophenolate Mofetil	100.0	0.0	0.0	Decreased Dose
Cyclosporine	0.0	100.0	0.0	Increased Dose
Cyclosporine+Mycophenolic Acid	75.0	0.0	50.0	Decreased Dose
Sirolimus	0.0	100.0	0.0	Increased Dose
Mycophenolic Acid	50.0	50.0	0.0	Intermediate Dose
Tacrolimus	57.14	42.86	0.0	Decreased Dose
Fentanyl	20.0	80.0	0.0	Increased Dose
Ibuprofen	0.0	100.0	0.0	Increased Dose
Granisetron	75.0	0.0	50.0	Decreased Dose
Mirtazapine	100.0	0.0	0.0	Decreased Dose
Morphine	33.33	66.67	0.0	Increased Dose
Amitriptyline	0.0	100.0	0.0	Increased Dose
Sertraline	0.0	100.0	0.0	Increased Dose
Doxepin	0.0	100.0	0.0	Increased Dose
Citalopram	0.0	100.0	0.0	Increased Dose
Imipramine	100.0	0.0	0.0	Decreased Dose
l-tryptophan	0.0	0.0	100.0	Intermediate Dose
Olanzapine	0.0	100.0	0.0	Increased Dose
Quetiapine	100.0	0.0	0.0	Decreased Dose

Rosuvastatin	0.0	100.0	0.0	Increased Dose
Atorvastatin+Rifampin	0.0	0.0	100.0	Intermediate Dose
Atorvastatin	0.0	83.33	33.33	Increased Dose
Pitavastatin	0.0	100.0	0.0	Increased Dose
Pravastatin	100.0	0.0	0.0	Decreased Dose
Simvastatin	0.0	83.33	33.33	Increased Dose
Fluvastatin	0.0	0.0	100.0	Intermediate Dose
Sulfasalazine	0.0	100.0	0.0	Increased Dose
Allopurinol	0.0	100.0	0.0	Increased Dose
Febuxostat	0.0	100.0	0.0	Increased Dose
Terbutaline	0.0	100.0	0.0	Increased Dose
Peginterferon alfa-2b+Ribavirin	100.0	0.0	0.0	Decreased Dose
Codeine	50.0	50.0	0.0	Intermediate Dose
Dextromethorphan	11.11	88.89	0.0	Increased Dose
N-Desmethyltamoxifen	0.0	75.0	50.0	Increased Dose
Bufuralol	0.0	100.0	0.0	Increased Dose
Cyclosporine+Dicloxacillin (In cystic fibrosis)	100.0	0.0	0.0	Decreased Dose
Dicloxacillin	100.0	0.0	0.0	Decreased Dose

SIDE EFFECTS(Detailed Report)

Molecules	% Low SE Studies	% High SE Studies	% Intermediate SE Studies	Likely Side Effects
Metformin	83.33	0.0	33.33	Low SE
Tolbutamide	100.0	0.0	0.0	Low SE
Prasugrel	100.0	0.0	0.0	Low SE
Clopidogrel	50.0	50.0	0.0	Intermediate SE
Aspirin+Clopidogrel	100.0	0.0	0.0	Low SE
Aspirin	56.25	43.75	12.5	Low SE
Warfarin	66.67	33.33	0.0	Low SE
Acenocoumarol	75.0	25.0	0.0	Low SE
Apixaban	100.0	0.0	0.0	Low SE
Flecainide	100.0	0.0	0.0	Low SE
Amiodarone	100.0	0.0	0.0	Low SE
Valproic acid	33.33	66.67	0.0	High SE
Mephenytoin	100.0	0.0	0.0	Low SE
Atenolol	100.0	0.0	0.0	Low SE
Verapamil	100.0	0.0	0.0	Low SE
Irbesartan	100.0	0.0	0.0	Low SE
Methadone	100.0	0.0	0.0	Low SE
Opioids (In general)	50.0	50.0	0.0	Intermediate SE
Mycophenolate Mofetil	62.5	37.5	25.0	Low SE
Cyclosporine	50.0	50.0	0.0	Intermediate SE
Cyclophosphamide	0.0	100.0	0.0	High SE

Valganciclovir	100.0	0.0	0.0	Low SE
Mycophenolic Acid	0.0	100.0	0.0	High SE
Cyclosporine+Mycophenolate Mofetil	33.33	66.67	0.0	High SE
Tacrolimus	100.0	0.0	0.0	Low SE
Celecoxib	100.0	0.0	0.0	Low SE
Acetaminophen	0.0	100.0	0.0	High SE
Fentanyl	63.64	36.36	0.0	Low SE
Diclofenac	33.33	66.67	0.0	High SE
Buprenorphine (with optional Fentanyl and Tramadol)	66.67	33.33	0.0	Low SE
Ondansetron	50.0	50.0	0.0	Intermediate SE
Clomipramine	0.0	100.0	0.0	High SE
Nefazodone	0.0	100.0	0.0	High SE
Venlafaxine	33.33	66.67	0.0	High SE
Paroxetine	33.33	66.67	0.0	High SE
Citalopram	25.0	75.0	0.0	High SE
Lithium	0.0	100.0	0.0	High SE
Olanzapine	46.67	53.33	0.0	High SE
Paliperidone	100.0	0.0	0.0	Low SE
Clozapine	14.29	85.71	0.0	High SE
Quetiapine	100.0	0.0	0.0	Low SE
Haloperidol	50.0	50.0	0.0	Intermediate SE
Risperidone	44.44	55.56	0.0	High SE

Rosuvastatin	50.0	50.0	0.0	Intermediate SE
Atorvastatin	37.5	62.5	25.0	High SE
Pravastatin	50.0	50.0	0.0	Intermediate SE
Simvastatin	64.29	35.71	14.29	Low SE
Methotrexate	60.0	40.0	0.0	Low SE
Sulfasalazine	100.0	0.0	0.0	Low SE
Aspirin (In Asthmatics)	75.0	25.0	16.67	Low SE
Volatile anesthetics with or without Succinylcholine	100.0	0.0	0.0	Low SE
Desflurane	100.0	0.0	0.0	Low SE
Enflurane	100.0	0.0	0.0	Low SE
Succinylcholine	100.0	0.0	0.0	Low SE
Codeine	50.0	50.0	0.0	Intermediate SE
Dextromethorphan	100.0	0.0	0.0	Low SE
N-Desmethyltamoxifen	75.0	0.0	50.0	Low SE
Bufuralol	100.0	0.0	0.0	Low SE
Streptomycin	75.0	25.0	0.0	Low SE

NOTE: Patients should not make any changes to their medications based on the results without the supervision of the Physicians

DISCLAIMER

1.Genetic testing using the methods applied at K&H is expected to be highly accurate.

2. Normal findings do not rule out the diagnosis of a genetic disorder since some genetic abnormalities may be undetectable with this test.

3. This test cannot reliably detect mosaicism. Some genes have inherent sequence properties (for example: repeat, homology, or pseudogene regions, high GC content, rare polymorphisms) that may result in suboptimal data, and variants in those regions may not be reliably identified.

4. False negative results may also occur in the setting suboptimal DNA quality.

5. The chance of a false positive or false negative result due to laboratory errors incurred during any phase of testing cannot be completely excluded.

6. Interpretations are made with the assumption that any information provided on family relationships is accurate. Consultation with a genetics professional is recommended for better interpretation of results.

7. Collection, processing, use, storage and retention of the anonymized data, the sample collected and related anonymized reports from the tests conducted for ongoing test developments, educational, scientific research and/or other related activities.

Meet the doctors

Dr. Kalyan Uppaluri is the cofounder and the owner of K&H Personalized Medicine Clinic and Research Institute. He did his medical training at the prestigious Gandhi Medical College. He then moved to the United States, where he specialized in Internal Medicine at the McLaren Hospital, Michigan. He also got a degree in Medical Genomics from Ivy league institute, Stanford University and pursued cancer research at Wayne State University, Michigan.

Dr. Hima Challa graduated from Gandhi Medical College and was among the top few in her batch. She specialized in Internal Medicine at St. Joseph Mercy Oakland, Michigan in the United States. She graduated in Medical Genomics from the Ivy league institution of Harvard Medical School. She also holds a master's in nutrition science from the Texas Women University and in integrative medicine from the Arizona University.

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