

# ATGC*life*

THE PIONEER IN GENETIC TESTING & REPORTING



world diabetes day  
14 November



## World Diabetes Day 2023: **Access to diabetes care**

Provides an opportunity to raise awareness of diabetes as a global public health issue and what needs to be done, collectively and individually, for better prevention, diagnosis and management of the condition.

# OUR PRODUCTS

## GenepowerRx<sup>TM</sup> TOTAL

The **GenepowerRx Total** is India's first-ever comprehensive health package with Genomic testing for preventive healthcare. A person tested with this gets a personalized health plan based on their genetic information which includes - the their nutrigenomics and fitness profile, a complete list of FDA approved medications and supplements that work best for them, and the inherent health risks and plan to mitigate them. (This includes the right nutritional and fitness plan with appropriate lifestyle recommendations).

## Oncorx<sup>TM</sup>


**Oncorx**, a product of GenepowerRx, is a broad companion diagnostic that is clinically and diagnostically validated for all solid tumors. The test is aimed to provide physicians with clinically actionable information to tailor-made targeted therapy to the patients based on the individual genomic profile and the type of cancer. This is powered by FDA approved biomarker information from Memorial Kettering Sloan Cancer Centre's clinical research guidelines.

## GenepowerRx<sup>TM</sup>


### PHARMACOGENOMICS

The **GenepowerRx Pharmacogenomics** is a test intended to inform the clinicians and their patients to personalize a drug therapy tailor-made according to the individual's genetic makeup. The test covers hundreds of medications used to treat various medical conditions. Our Pharmacogenomics report debunks the widely popular theory in medical science, 'One Size Fits All'.


# OUR OTHER PRODUCTS

**GenepowerRx DiabetesCare**  **GenePowerRx DiabetesCare** a DNA based whole exome sequencing and interpretation service to prevent disease and improve diabetes health.


- Helps in the early identification of predisposed conditions, prevention, and treatment of the condition
- Personalized recommendations on lifestyle changes to prevent or delay the onset
- Insights on prevention of multifactorial diseases
- Insights from pharmacogenomics profile which helps to choose right diagnostic drug with least side effects.

**GenepowerRx CardiacCare**  **GenePowerRx CardiacCare** a DNA based whole exome sequencing and interpretation service to prevent disease and improve heart health.


- Helps in the identification, prevention and management of the predisposed conditions
- Personalized recommendations on lifestyle changes to prevent or delay the onset
- Insights on other associated triggers, nutrigenomics and fitness profiles.
- Comprehensive pharmacogenomics profile of cardiac care drugs along with anti hypertensive drugs and dyslipidemia drugs respectively


**GenepowerRx NephroCare**  **GenePowerRx NephroCare** a DNA based whole exome sequencing and interpretation service to identify predisposed conditions and management to improve kidney health.

- Helps in the prevention, management of the condition
- Personalized recommendations on lifestyle changes to prevent or delay the onset
- Effective disease management with early diagnosis
- Insights on other associated triggers


**GenepowerRx PediaHealth**  **GenePowerRx PediaHealth** a DNA based whole exome sequencing and interpretation service for a deeper understanding of your infant's health and disease management of various predisposed conditions.

- Comprehensive understanding of Your kid's DNA & health
- Early diagnosis and timely management of inborn metabolic disorders of early childhood
- Help with undiagnosed genetic condition

**GenepowerRx ReproductiveHealth**  **GenePowerRx ReproductiveHealth** a DNA based whole exome sequencing that helps in comprehensive genomic assessment for a deeper understanding of Male and female Reproductive health issues.

**GenepowerRx NeuromuscularHealth**  **GenePowerRx NeuromuscularHealth** a DNA based whole exome sequencing to address Dystonia, Neurodegeneration, Polyneuropathy, susceptibility to Scoliosis, myasthenia syndromes and Seizure disorders.

- Risk and chances of progression of neurological disorders including - Parkinson's disease, dementia, myasthenia and seizures
- Risk of rare neurological conditions and spinal muscular dystrophies and atrophies can be understood

**GenepowerRx MentalHealth**  **MentalHealth.me** a Comprehensive genomic assessment of Anxiety, Depression, Schizophrenia and pharmacogenomics for optimized treatment and management.

- Comprehensive pharmacogenomics profile of antipsychotics, antidepressants, anti-anxiety medications which include drug response, side effect profile and dosing.
- Risk and progression of schizophrenia, mood disorders, anxiety (and) depression.





## Table of Contents

- 01 | Editorial
- 02 | Exploring Diabetes Complexity: A Journey into Subclassification
- 03 | Individualizing Diabetes Care: Precision Medicine's Impact on Type 1 Diabetes
- 04 | Advancing Precision Medicine in Type 2 Diabetes
- 05 | On the Horizon: Glucose Predictions in Diabetes Management
- 06 | Dr. Bhogaraju Ramana Rao: A Lifelong Journey of Compassion and Healing
- 07 | FDA Approves New Diabetes Medication: BRENZAVVY™ - What You Need to Know



# World Diabetes Day Special Edition

**Esteemed Readers,**

This World Diabetes Day, we bring you a special edition dedicated to exploring the vital intersection of diabetes and precision medicine. On November 14, we unite with the global community to raise awareness about diabetes, emphasizing its prevention and effective management. It is a day of reflection and action, and our newsletter is committed to contributing to this crucial conversation.

In this edition, we journey through the intricate web of diabetes complexity, highlighting the century-long progress in personalized diabetes management. We explore how precision medicine is advancing the care for diabetes, offering tailored solutions that promise to revolutionize the way we approach this condition. We also look to the future, with an exciting glimpse into glucose predictions and their potential to empower individuals in the proactive management of diabetes. Do join us in commemorating the inspiring journey of Dr. Bhogaraju Ramana Rao, a dedicated healthcare practitioner offering essential medical services in his Free Village Clinic.

As we come together on World Diabetes Day, let us deepen our understanding of this condition and the remarkable strides in precision medicine. It is our collective responsibility to increase awareness, offer support, and stand in solidarity with those affected by diabetes. We hope that the insights shared in this edition will foster awareness and inspire you to be part of the ongoing journey towards better diabetes prevention and management.

**Dr. Hima Challa**

Director, GenepowerRx



**Dr. Hima Challa**

Director, GenepowerRx

MD FACP, MD in Internal Medicine, USA, Professional Degree in Medical Genomics, Harvard Medical School, Masters in Nutrition Science, Texas Women University,

Founding member of Pharmacogenomics Research Network, Program Director, Internal Medicine residency program, Campbell University

The word "DIABETES" is written in large, light purple, 3D block letters. The letter 'I' is replaced by a vertical stack of four pills: a white one at the top, a blue one, a white one, and a blue one at the bottom. The letters are mounted on thin gold-colored sticks.



# Exploring Diabetes Complexity: A Journey into Subclassification

As the world approaches World Diabetes Day on November 14th, the global focus sharpens on this pervasive health challenge. Traditionally, diabetes has been categorized into two familiar types: type 1 and type 2. However, the vast diabetes landscape extends far beyond these classifications. This World Diabetes Day, the medical community embarks on an exploratory journey, guided by the pioneering work of researchers illuminating the intricate nuances of diabetes, challenging conventional wisdom and offering new avenues of hope.

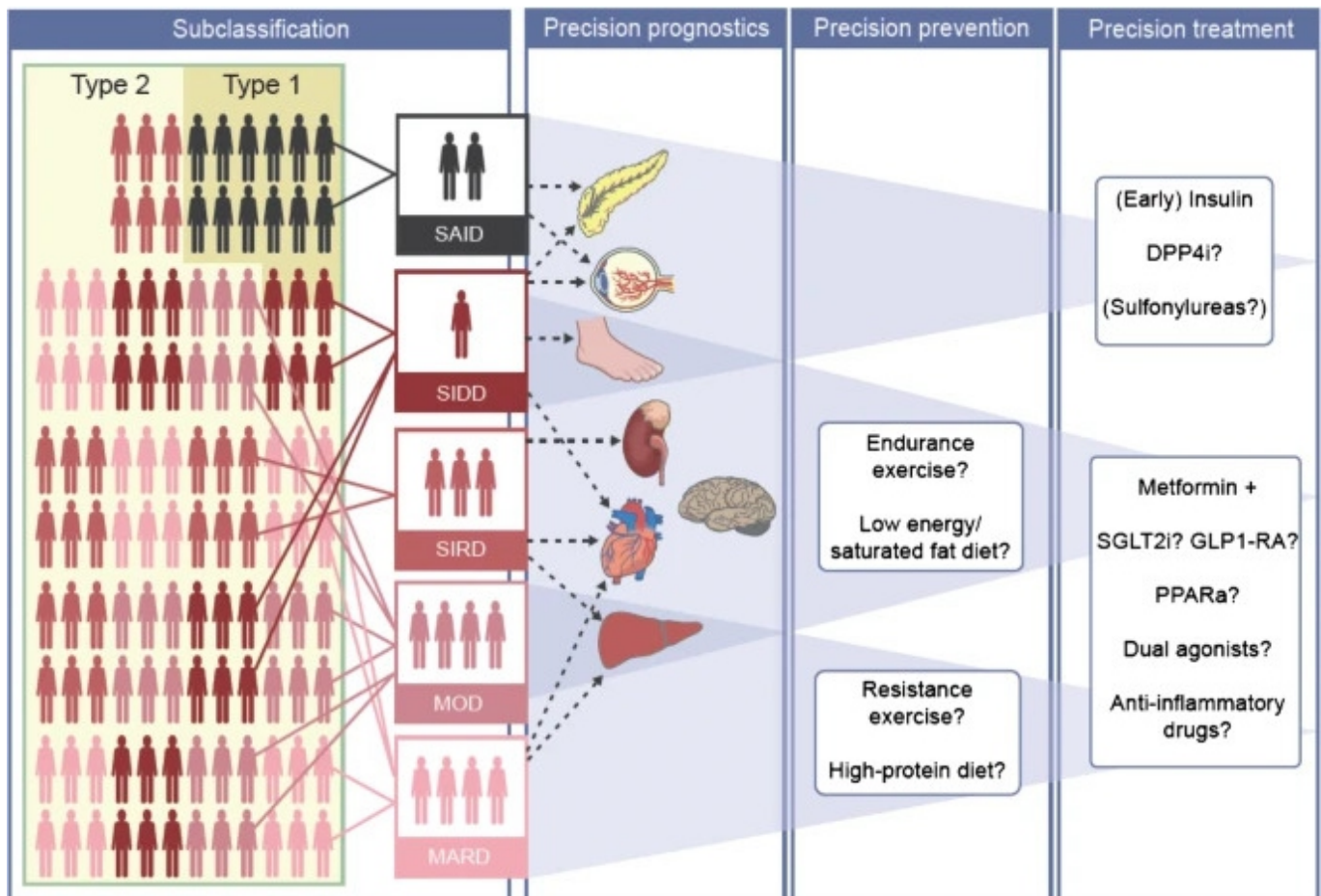
Diabetes, characterized by persistently elevated blood glucose levels, encompasses a spectrum of forms, including type 1, type 2, gestational, and diabetes arising from unique causes like monogenic factors or medication-induced effects. The majority of cases fall into the categories of type 1 (5-10%) or

type 2 (90-95%). Diagnosing the precise type of diabetes presents challenges. Type 1 diabetes is often associated with islet autoantibodies, yet these markers may be absent in some cases. In contrast, monogenic diabetes can be identified with a single genetic test. However, type 2 diabetes diagnosis is intricate, as no single biomarker can definitively confirm it.

## Personalized Diabetes Care

The mission at hand is clear: to subclassify diabetes into more homogeneous groups, thus enabling personalized treatment. Researchers are harnessing both phenotypic data (clinical traits) and genotypic information (genetic insights) to uncover the unique biological mechanisms underpinning hyperglycemia in individual patients. This personalized approach promises to revolutionize diabetes management.

MARD - Mild Age - Related Diabetes | MOD - Mild Obesity - Related Diabetes | SAID - Severe Autoimmune Diabetes  
SIDD - Severe Insulin Deficient Diabetes | SIRD - Severe Insulin Resistant Diabetes





The journey into diabetes classification unfolds along two distinct pathways: phenotypic and genetic. These approaches, although unique in their methodologies, share the overarching goal of enhancing our comprehension of diabetes. Conditions like latent autoimmune diabetes in adults (LADA) and ketosis-prone diabetes blur the boundaries between these traditional classifications. Innovative algorithms have emerged to objectively classify diabetes subtypes based on clinical criteria such as insulin secretion capacity, insulin resistance, and autoantibodies.

One noteworthy algorithm, introduced by Leif Groop and colleagues in 2018 (often referred to as the Ahlqvist classification), categorizes individuals based on clinical variables like autoantibodies, age at diagnosis, BMI, HbA1c, and insulin secretion and resistance estimates. This approach has identified five subtypes (Severe autoimmune diabetes (SAID), Severe insulin-deficient diabetes (SIDD), Severe insulin-resistant diabetes (SIRD), Mild obesity-related diabetes (MOD), and Mild age-related diabetes (MARD) respectively.) each bearing distinct clinical significance.

Genetic data provides an additional avenue for diabetes classification, aiding in the identification of monogenic diabetes, autoimmune diabetes, and specific type 2 diabetes subtypes. The integration of phenotypic and genotypic data promises even more

refined distinctions.

While progress has been made, challenges persist, particularly in seamlessly integrating phenotypic and genotypic data, especially in pediatric cases. Demonstrating the clinical significance of these subtypes through trials is essential, particularly when assessing cardiovascular outcomes. The practical implementation of these classifications will require user-friendly decision support tools and equitable inclusion of diverse populations.

This World Diabetes Day, we stand on the shoulders of pioneering researchers who have redefined our understanding of diabetes. The conventional classifications of types 1 and 2 no longer suffice to encapsulate the intricate nature of this condition. Emerging subclassifications offer the promise of personalized, precise care for those facing the challenges of diabetes. Together, we embark on a journey into the heart of diabetes, where science and compassion converge to illuminate a brighter path for all individuals impacted by this complex condition.

**Suggested Reading:**

Deusch, A. J., Ahlqvist, E., & Udler, M. S. (2022). Phenotypic and genetic classification of diabetes. *Diabetologia*, 65(11), 1758-1769.



# Individualizing Diabetes Care: Precision Medicine's Impact on Type 1 Diabetes

In the realm of diabetes care, the journey towards personalized and precise approaches has been a century in the making. From the discovery of insulin in 1922 to the present, a relentless quest for customized diagnosis, treatment, prevention, and prediction in Type 1 diabetes has transformed the landscape of care. In this article, we delve into the recent strides and the far-reaching impact of precision medicine in the field.

The pursuit of precision medicine in Type 1 diabetes began with the monumental discovery of insulin in 1922. Initially, the focus was solely on refining insulin therapy, but as time passed, the vision expanded. Today, it encompasses personalized diagnosis, treatment, prevention, and prediction. One pivotal milestone in this journey was the acknowledgment of Type 1 diabetes as an autoimmune disease. This crucial realization paved the way for a deeper comprehension of its pathophysiology, genetics, and natural history. Concurrently, advancements in insulin delivery and glucose monitoring technologies provided the essential tools for self-management, enhancing the overall quality of care.

Notably, the road to precision medicine is not solely paved with technological innovations. It also necessitates personal and psychosocial support for individuals living with Type 1 diabetes. The human element of care is an indispensable component, as it aids people in adapting to the continually evolving landscape of diabetes management. Envisioning the future of precision medicine in Type 1 diabetes is an exhilarating prospect. Recent proposals by experts offer a roadmap for achieving pharmacological precision in diabetes care. Building upon these insights, we can chart a similar course for Type 1 diabetes.

The roadmap for precision medicine in Type 1 diabetes encompasses four critical aspects: prediction, prevention, diagnosis, and treatment as shown in the figure below. Each of these areas presents unique opportunities for innovation.

**Prediction:** Advances in omics techniques and real-time metabolic monitoring offer the potential to unravel the mysteries of

Type 1 diabetes. Improved prediction methods can help identify individuals at risk, enabling early interventions and personalized care plans.

**Prevention:** With a deeper understanding of the disease's pathogenesis, the concept of prevention becomes a realistic goal. Research is inching closer to strategies that can prevent, halt, or even reverse the progression of Type 1 diabetes.

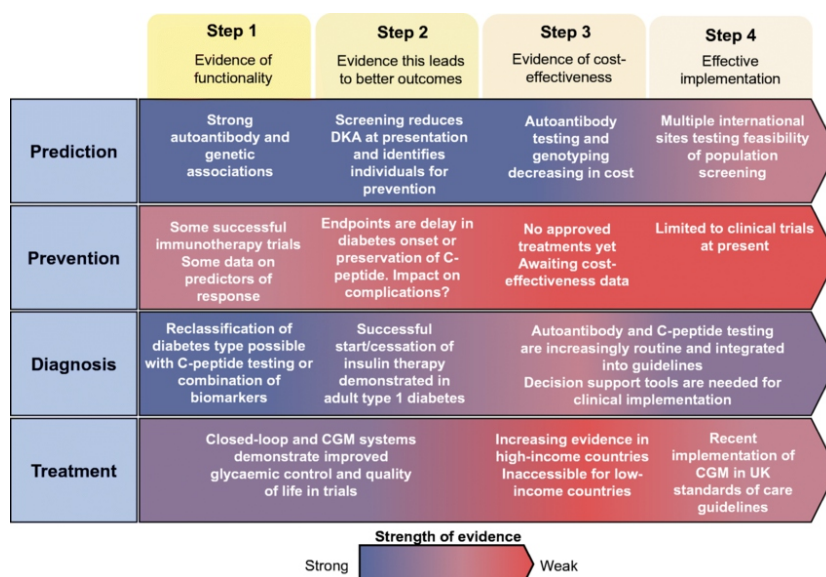
**Diagnosis:** Precision medicine extends to diagnosis as well. More accurate and personalized diagnostic tools can expedite the identification of Type 1 diabetes and ensure timely interventions.

**Treatment:** Tailored treatments, informed by a comprehensive understanding of each patient's unique biology, have the potential to revolutionize diabetes care. This approach moves beyond one-size-fits-all treatments, bringing us closer to personalized disease-modifying therapies.

As we stand on the brink of a new era in diabetes care, the power of precision medicine shines brightly. With every step we take, we uncover new possibilities and untangle the intricate web of Type 1 diabetes. The roadmap for precision medicine is a guiding light, pointing us towards a future where each patient's journey with diabetes is genuinely personalized.

## Further reading

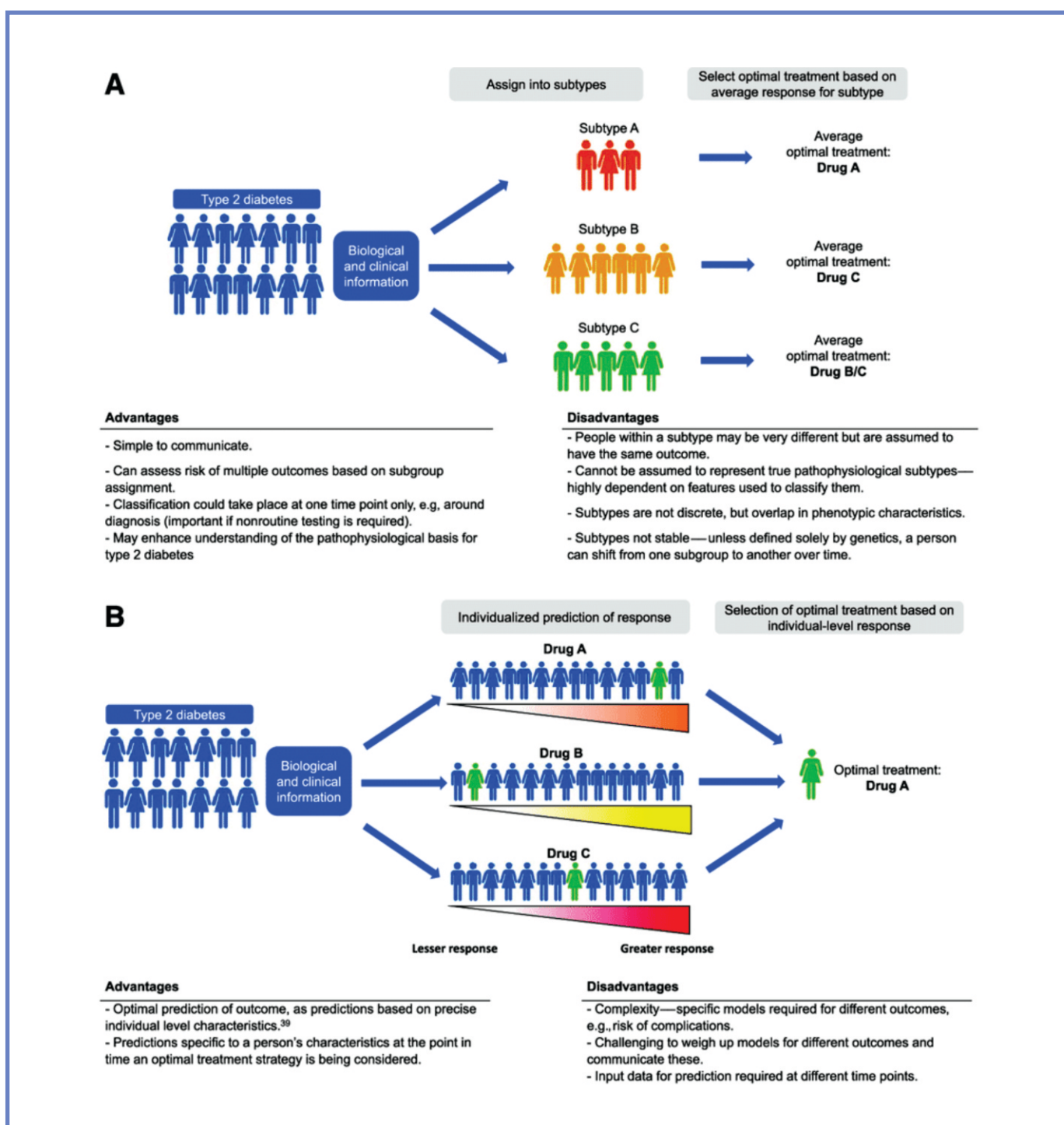
Carr, A. L., Evans-Molina, C., & Oram, R. A. (2022). Precision medicine in type 1 diabetes. *Diabetologia*, 65(11), 1854-1866.



# Advancing Precision Medicine in Type 2 Diabetes

In the field of diabetes research, precision medicine is gaining traction as a means to personalize treatments for type 2 diabetes patients. In the pursuit of optimizing the selection of treatment for type 2 diabetes, recent research has taken significant strides in uncovering the potential of precision medicine. Type 2 diabetes is characterized by its heterogeneity, with individuals responding differently to glucose-lowering medications.

However, current treatment strategies are based on average effects observed in clinical trials rather than individual patient characteristics. Precision medicine in type 2 diabetes aims to bridge this gap by identifying predictors of differential drug responses based on patient characteristics. Recent studies reveal significant differences in drug responses, particularly after metformin treatment, for various noninsulin therapies.





The research underscores the importance of routinely available clinical data in advancing precision medicine for type 2 diabetes. Rather than categorizing patients into subgroups based on pathophysiological characteristics, the approach proposes using these features as continuous measures in probabilistic "individualized prediction" models. This shift in methodology could lead to improved selection of treatments tailored to each patient's unique profile. The study also explores the potential role of genetics in enhancing precision medicine. Genetically defined subtypes and individual genetic markers have shown differences in drug responses, indicating their potential utility in treatment selection.

These findings demonstrating substantial and clinically significant disparities in glycemic responses signal that a precision medicine approach to optimize type 2 diabetes treatment is on the horizon. As we look to the future, the most pragmatic approach appears to be leveraging routine clinical markers, with the most precise method being the integration of continuous characteristics into individualized, probabilistic prediction models. This model could be implemented precisely at the point where a decision to escalate treatment is made, steering away from the conventional subtyping method.

These estimates of differences in treatment response have the potential to enhance the presently limited stratification of individuals with type 2 diabetes, typically based on cardiovascular and renal comorbidities. This innovation has the potential to benefit all individuals requiring glucose-lowering treatment. Even for those with subtle distinctions in treatment responses, this information remains vital, facilitating treatment selection based on alternative criteria. Embracing a model of discovery within routine data, followed by replication and testing in existing clinical trial datasets, presents a cost-effective and principled approach to evaluating the potential of precision medicine. This model isn't limited to type 2 diabetes alone; it holds promise for application in other chronic diseases as well.

In our ever-evolving world of diabetes management, the dawn of precision medicine offers new hope for tailored treatment strategies. Recent research, encapsulated in John M. Dennis' work, illuminates the path to a more personalized approach for type 2 diabetes care. The promising developments indicate that a future where treatment decisions are based on individual characteristics is within reach. Let's delve into the profound potential of precision medicine and how it could reshape the landscape of diabetes care.

---

**References:**

Dennis, J. M. (2020). Precision medicine in type 2 diabetes: using individualized prediction models to optimize selection of treatment. *Diabetes*, 69(10), 2075-2085.



# On the Horizon: Glucose Predictions in Diabetes Management

In the world of diabetes management, Continuous Glucose Monitoring (CGM) systems have brought a significant transformation. These systems provide real-time data on glucose levels, offering a lifeline for individuals with diabetes and healthcare professionals. However, dealing with the intricacies of CGM systems, such as sensor delays and rapidly changing glucose levels, requires advanced predictive models for glucose classification. In this article, we embark on a journey to explore a recent study that compares three distinct predictive models for glucose level classification.

The journey begins with the quest to discover the most effective predictive model for glucose level classification. The study we are about to embark on aims to evaluate three different models:

- Autoregressive Integrated Moving Average (ARIMA)
- Logistic Regression
- Long Short-Term Memory networks (LSTM)

The goal is to understand how these models perform in predicting glucose levels 15 minutes and 1 hour ahead. The study employs several metrics, including precision, recall, and accuracy, to measure each model's performance across various glycemic classes. As we delve into the heart of the study, the results unveil valuable insights. It becomes evident that ARIMA falls behind the other models, struggling to predict hyper- and hypoglycemia classes effectively, both in the short term and over a longer time frame.

For the short-term prediction, a hero emerges in the form of logistic regression. This model stands out with impressive recall rates: 96% for hyperglycemia, 91% for euglycemia, and a remarkable 98% for hypoglycemia. In the context of predicting hypoglycemia within the next 15 minutes, logistic regression proves to be a reliable ally.

In the realm of longer-term forecasts (1-hour horizon), the LSTM model takes center stage. It demonstrates remarkable accuracy in predicting hyper- and hypoglycemia classes with recall values of 85% and 87%, respectively. This model shines when the focus is on glucose predictions for the next hour.

The study yields valuable lessons. It underscores the importance of choosing the right model according to specific requirements and clinical contexts. The intricacies of diabetes management require tailored solutions, and different models offer distinct strengths and weaknesses.

Logistic regression excels in predicting hypoglycemia within the next 15 minutes, making it a valuable tool for addressing immediate glycemic fluctuations. On the other hand, the LSTM model outshines others when it comes to predicting glucose levels over the next hour, providing a robust solution for managing daily activities and insulin dosing.

The research doesn't end here; it's merely a waypoint. The study suggests that the path forward involves exploring hybrid models and ensemble approaches. These strategies combine the strengths of multiple models, offering the potential to further enhance the accuracy and reliability of glucose predictions. By continuing to innovate and research in this field, we can improve glycemic control and elevate diabetes management to new heights.

In nutshell, this narrative journey through the world of predictive glucose level classification models underscores the importance of personalized model selection in diabetes management. It serves as a reminder that innovation and research are the guiding stars on our path to better glucose control and improved quality of life for individuals with diabetes.

---

## Reference

Kistkins, S., Mihailovs, T., Lobanovs, S., Pīrāgs, V., Sourij, H., Moser, O., & Blizņuks, D. (2023). Comparative Analysis of Predictive Interstitial Glucose Level Classification Models. *Sensors*, 23(19), 8269.



# Dr. Bhogaraju Ramana Rao - A Lifelong Journey of Compassion and Healing

In the realm of medicine, there are those whose contributions transcend the boundaries of profession and touch the lives of countless people. Dr. Bhogaraju Ramana Rao is one such extraordinary figure—a highly accomplished and compassionate physician whose name is synonymous with selfless service and dedication to the underserved. With over five decades of devoted medical practice, Dr. Ramana Rao has etched an indelible mark on the lives of millions through his own non-profit organization, **"The Free Village Clinic"**

Dr. Ramana Rao's voyage in the world of medicine began at Kasturba Medical College in Manipal, where he earned his MBBS degree in 1973. Fuelled by an unquenchable thirst for knowledge and skill enhancement, he furthered his education, obtaining his MD in Medicine and Cardiology from Bangalore Medical College in 1980. Throughout his illustrious career, Dr. Ramana Rao served as a Senior Consultant at prestigious institutions such as Fortis, Mallya, and Columbia Asia Hospitals in Bangalore. His unwavering commitment to lifelong learning has been a hallmark of his journey.

## The Free Village Clinic:

On a memorable Indian Independence Day in 1973, Dr. Rao embarked on a journey that would transform the lives of thousands. He established "The Free Village Clinic," known as the Sunday Village Clinic or Bhanuvara Grama Chikitsalaya. This clinic has been a beacon of hope every Sunday for the past five decades, offering free medical care to rural communities in need. What is truly remarkable is the sheer number of patients the clinic serves, averaging between 800 to 1,000 every Sunday. This enduring commitment to improving the health of the underprivileged is a testament to Dr. Ramana Rao's unwavering dedication.

Dr. Rao's standing in the medical community is reflected through his professional affiliations and memberships. He is a distinguished Fellow of the Indian Institute of Diabetology, the International College of Angiology, the Academy of General Education in Manipal, and the Society of Electrophysiology. In addition, he is a respected life



member of esteemed organizations like the Association of Physicians of India, the Association of Medical Specialties, and the Cardiological Society of India. These affiliations underscore his position as a revered authority in his field.

Outstanding contributions deserve recognition, and Dr. Ramana Rao's accolades are well-deserved. In 2010, he was honoured with the prestigious "Padma Shri" award for Medicine by the President of India, making him the 9th physician in Karnataka to receive this esteemed honour. He was also recognized with the "Karnataka Rajyotsava Award" in 1998, the highest state honour in Medicine. Further accolades include the "B.C. Roy Award" in 2008 from IMA Bangalore and the "Dr. Abdul Kalam National Award" in the same year for Rural Medical Service. Notably, he received the "Best Physician Award" for the year 1994-95 from the Chief Minister of Karnataka, acknowledging his remarkable dedication and contributions to healthcare.

In the world of medicine, Dr. Bhogaraju Ramana Rao stands as a shining example of hope, a model of compassion and unwavering dedication. His narrative is not just one of professional excellence, but also a story of humanity—a life devoted to serving the underprivileged. Through "The Free Village Clinic" and his relentless commitment, he has touched the lives of countless individuals, offering them not just medical care, but a renewed sense of hope and well-being. Dr. Ramana Rao's journey is an inspiration that reminds us that true achievers are those who use their success to uplift others.



# FDA Approves New Diabetes Medication: BRENZAVVY™ - What You Need to Know

In the realm of healthcare, innovative drugs are not just about scientific breakthroughs; they represent new avenues of treatment for patients and significant progress in the field of medicine. The development of these groundbreaking drugs and therapeutic biological products is facilitated by the FDA's Center for Drug Evaluation and Research (CDER), which plays a pivotal role in ensuring that these new treatments meet the highest standards of safety and efficacy.

BRENZAVVY, affectionately known as bexagliflozin, stands at the forefront of precision medicine for type 2 diabetes. This isn't your run-of-the-mill treatment; it's a crucial component of a comprehensive healthcare strategy that embraces diet and exercise. But let's get one thing straight from the start – BRENZAVVY isn't tailored for individuals with type 1 diabetes. It's not their avenue to better health, as it could raise the risk of a serious condition known as diabetic ketoacidosis, necessitating hospital intervention.

Before we dive into the realm of BRENZAVVY, here's a roadmap to ensure you make the most of this cutting-edge treatment:

**Allergies:** First and foremost, ensure you aren't allergic to bexagliflozin or any of its components. Allergic reactions can be rather dramatic, and it's best to avoid that show.

**Kidney Dialysis:** This medication isn't the answer for those undergoing kidney dialysis. Make sure you're not in this category.

**Pre-existing Conditions:** Open up to your healthcare provider about your medical history. If you've had amputations, battled heart disease, faced kidney issues, grappled with liver problems, or experienced pancreas-related concerns, it's imperative to discuss these.

**Surgery Plans:** If you're gearing up for surgery, have a heart-to-heart with your healthcare provider. The timing and coordination are critical, and this dialogue can save you headaches (and other body parts) down the line.

**Family Planning:** For those with family planning on their minds, pregnancy and breastfeeding considerations are paramount. BRENZAVVY may have implications for both, so it's time to consult with your healthcare provider.

Follow your healthcare provider's instructions to the letter. This isn't a "do it yourself" adventure.

- Your daily dose of BRENZAVVY should be taken in the morning, with or without food – your choice.
- No chewing, no crushing – just swallow those tablets as they are.
- If you miss a dose, catch up as soon as you remember. But if it's close to your next dose, don't double up – just skip it. Oh, and keep an eye on those blood sugar levels, as your healthcare provider advises.

Just like any journey, there are potential roadblocks. BRENZAVVY might come with some side effects:

**Ketoacidosis:** This is the big one. If you're feeling nauseous, have tummy trouble, and an overall sense of unwellness, don't wait – seek medical help immediately.

**Amputations:** There's a small risk of lower limb amputations. Check your feet for any signs of trouble, like ulcers, sores, or infections.

**Dehydration:** Feeling dizzy or weak? Watch out for fainting, especially when you stand up. This could be a sign of dehydration, so hydrate wisely.

**Yeast Infections:** Ladies and gentlemen, be on the lookout for yeast infections. Unpleasant odours, unusual discharge, and itching can be the warning signs.

**Urinary Tract Infections:** Painful urination and frequent bathroom trips? It could be a urinary tract infection – something to discuss with your healthcare provider.

In the grand scheme of healthcare, BRENZAVVY offers an exciting avenue for managing type 2 diabetes, firmly grounded in the principles of precision medicine. However, the key to success lies in the guidance of your healthcare provider. If you have concerns or encounter any unexpected symptoms, don't hesitate to reach out for advice and support. This information is for reference and should complement, not replace, professional medical advice. Before making any changes to your medication regimen, consult your trusted healthcare provider at GenepowerRx.

---

#### Source:

FDA's Center for Drug Evaluation and Research (CDER)

## Drugs approved by FDA for Diabetes Mellitus, Type 2 till date

1. Actos (pioglitazone); ACTOplus met (pioglitazone and metformin HCl)
2. Adlyxin (lixisenatide)
3. Amaryl (glimepiride)
4. Avandia (rosiglitazone maleate)
5. Brenzavvy (bexagliflozin)
6. Bydureon, Bydureon BCise (exenatide extended-release for injectable suspension)
7. Byetta (exenatide)
8. Cycloset (bromocriptine mesylate)
9. Farxiga (dapagliflozin)
10. Glyset (miglitol)
11. Invokana (canagliflozin)
12. Januvia (sitagliptin phosphate)
13. Jardiance (empagliflozin)
14. Jentaduetto (linagliptin plus metformin hydrochloride)
15. Kerendia (finerenone)
16. Mounjaro (tirzepatide)
17. Nesina (alogliptin)
18. Onglyza (saxagliptin)
19. Ozempic (semaglutide) subcutaneous injection
20. Qtern (dapagliflozin and saxagliptin)
21. Soliqua 100/33 (insulin glargine and lixisenatide injection)
22. Steglatro (ertugliflozin)
23. Synjardy (empagliflozin and metformin hydrochloride)
24. Tanzeum (albiglutide)
25. Tradjenta (linagliptin)
26. Trijardy XR (empagliflozin, linagliptin, and metformin hydrochloride extended-release tablets)
27. Trulicity (dulaglutide)
28. Victoza (liraglutide)
29. Welchol (colesevelam hydrochloride)
30. Xigduo XR (dapagliflozin + metformin hydrochloride)
31. Xultophy 100/3.6 (insulin degludec and liraglutide injection)

## Meet the Doctors



**Dr Kalyan Uppaluri** is the co-founder and the owner of GenepowerRx 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.



**Dr Hima Challa** graduated from Gandhi Medical college and was among top few in her batch. She specialized in Internal Medicine at St. Joseph Mercy Oakland, Michigan in 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 Arizona University.

**GenepowerRx<sup>®</sup>**  
Genetic Science powered by K&H

Suit#2B Plot No.240, Nirvana  
Road No.36, Jubilee Hills  
Hyderabad - 500033, India

+91 95022 22300  
info@khdreamlife.com  
www.genepowerx.com